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BIANCO LUNOS BOGTRYKKERI
1917

DANMARK-EKSPEDITIONEN

TIL GRØNLANDS NORDØSTKYST 1906—1908

UNDER LEDELSE AF

L. MYLIUS-ERICHSEN

BIND IV

INDHOLD

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ETHNOGRAPHIC DESCRIPTION

OF

THE ESKIMO SETTLEMENTS AND STONE REMAINS

IN

NORTH-EAST GREENLAND

BY

CHR. BENDIX THOSTRUP

1911

MUSEUM OF COMPARATIVE ZOOLOGY

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Corrigendum.

Page 196, illustration: for shelter 556 read 566.

I. Introduction.

When "Danmark-Ekspeditionen" set out on June 24th 1906, it was the intention that the leader of the Expedition, Ludvig Mylius-Erichsen, should himself take charge of the ethnographic interests, but the tragic course of circumstances, as is so well known, decided things otherwise. On March 28th 1907 Mylius-Erichsen left the station at Danmarks Havn and never returned. The ethnographic investigations at the station remained then at a standstill, until the Second-in-command of the Expedition, Alf Trolle, First-Lieutenant of the Navy, on November 30th 1907 instructed me to undertake the ethnographic work.

In the course of the winter I then arranged and labelled the things that had been found up to date, read up the ethnographic literature and made extracts of the ethnographic data from the day-books of the Expedition, as also from Mylius-Erichsen's papers.

On the basis of the knowledge acquired in this way I drew up the plan for the ethnographic investigations of the coming summer, resolving to use most energy in the collecting of objects, so that I might be able to return home to Denmark with ethnographic acquisitions comparable more or less with the other scientific achievements of the Expedition, even though the subject had remained untouched the whole of the summer of 1907.

These are the circumstances which led to this work appearing under my name as author. The material has been collected by Mylius-Erichsen and myself, but what is written is the expression of my own opinion on what I have seen in the field. The poor library on the subject in the possession of the Expedition was of but little assistance to me in general; but, on the other hand, I owe my comrades of the Expedition who helped me my warmest thanks for the support they gave my work in every respect.

I would likewise express my best thanks to Vice-Inspector Herluf Winge, who has most kindly determined the bones brought home, to Professor H. P. Steensby for his help in various ways and Thomas

THOMSEN of the Copenhagen Museum, who has worked through the material for this report along with me.

The ethnographic investigations of the Expedition. On the stretch of Greenland's east coast traversed by the Expedition — from Sabines Ø (lat. 74½°) to Kap Bridgman (lat. 83½°) — signs of an earlier occupation by the Eskimos were found at most places on the coast (see Pl. IV), but no living Eskimos were met with.[1]

The region over which the Expedition worked was so extensive, that only a small part of it could be investigated very closely, and the portion best investigated was naturally the neighbourhood of Danmarks Havn at Kap Bismarck (lat. 76¾), where the Expedition had its station (see Pl. V).

The investigations in 1906 were carried out by MYLIUS-ERICHSEN assisted by several members of the Expedition, and in the spring of 1907 MYLIUS-ERICHSEN — likewise assisted by his companions — investigated the coast from the station northwards to Kap Glacier.

The absence of MYLIUS-ERICHSEN and his comrades after the spring journey of 1907 led to great changes in the programme of the Expedition, — not least in the work connected with the ethnographic investigations, where MYLIUS-ERICHSEN himself was the director.

Not only was a large portion of the observations north of lat. 80° lost, but even the work nearer to the station was affected by the absence of the sledge-team, as a comparatively large part of the Expedition's time, material, dogs and personnel was employed in the search for the missing explorers and thus could not be used for the scientific investigations. The fact alone, that the whole summer of 1907 saw nothing done on the ethnographic side of the programme of the Expedition, was in itself very regrettable, but the greatest loss naturally was the personal influence, power and lead of MYLIUS-ERICHSEN, and even with the best of help it has not been possible for me to produce such weighty results even approximately as the Expedition would have gained, if MYLIUS-ERICHSEN had been able to conclude the ethnographic work.

In the summer of 1908 the short period of work was utilized to the fullest extent.

All the independent investigations were made by myself, with exception of some explorations in the district round Teufelkap, which

[1] Cf. SCORESBY 1: p. 333; SABINE: pp. 418, 416 Chart; CLAVERING: pp. 1—30, Peterm. Mitth. 1868: p. 223; 1870: pp. 325—26, 327, 418; 1871: p. 224; PANSCH: p. 53; KOLDEWEY: I, pp. 588, 600—04; II: pp. 144—45; GREELY: I, p. 27; RYDER: p. 283; SØREN HANSEN: pp. 3—4; AMDRUP: 2, pp. 288, 289 and THALBITZER: p. 343.

were undertaken by First-Lieutenant H. Bistrup and the investigations south of Bessels Fjord which were made by Hakon Jarner, Stud. polyt. Both of these carried out the investigations according to instructions given them by me. As a matter of fact, almost all the members of the Expedition have contributed something to the collection and on practically all the journeys made there has been one of the members who was particularly engaged in noting occurrences of ethnographic interest. And it may be specially mentioned, that it was entirely due to the mate Gustav Thostrup and Dr. A. Wegener, that we at all came into possession of ethnographic material in the spring of 1907; on their own initiative and responsibility they brought in all the things collected at Eskimonæsset (lat. 80° 26′).

During the period that I was making ethnographic observations — whilst drawing up a special chart of the district round about the Kap Bismarck station — the engineer Herman A. Koefoed acted as my indispensable assistant, both in physical and mental regards.

The investigations were continued even after the ship had left Danmarks Havn and on Renskæret and Maroussia I received excellent help from Dr. J. Lindhard and Army-Captain J. P. Koch — without which I should not have been able to get these two important localities investigated.

Student Frits Johansen has assisted me in various ethnographic investigations to the best of his ability, and only a very forced departure from the land prevented the Chief-engineer Ivar Weinschenck and the mate Gustav Thostrup from carrying out the promise given me with the utmost willingness to make excavations on Syttenkilometernæsset, whilst I myself was working at other places. Lastly, L. Peter E. Freuchen, student of medicine, devoted the greatest care in the packing of the fragile skulls and parts of skeletons.

Occurrence of earlier settlements. The east coast of Peary Land was traversed by J. P. Koch, Aage Bertelsen and Tobias Gabrielsen, who found no trace of earlier Eskimo occupation. They had indeed but little opportunity for investigating, but would nevertheless scarcely have missed noticing the presence of building remains, had there been any. The probability is, that there has not been any Eskimo settlement here.

The south coast was visited by Mylius-Erichsen's sledge-team, it is true, but all their supplies had so run short at that time that the visit only had the character of a very necessary hunting excursion, whose main object put all else in the shade excepting

just the geographical observations made during the excursion. This is the reason, I consider, why our Expedition found no signs of the presence of Eskimos on this coast either, and I think it probable that such will be found here at some future time, since they have been discovered on the south side of Independence Sound at Kap Peter Henrik.

On the Greenland continent itself the conditions with regard to earlier occupation in the region investigated by us are quite the same as in other parts of Greenland investigated by other expeditions.[1]

Wherever the conditions have made it possible for human beings to live, remains are found from a time when the Eskimos occupied the land.

Occupation depended necessarily on the character of the land; it occurred at the places where the form of the land made possible the formation of the even winter-ice, so necessary for the existence of the North-East Greenland Eskimos.[2] Extensive inlets and fjord ramifications,[3] as also coastal stretches and islets lying in the shelter (i. e. to the south and west) of large promontories of the land, so that they might remain comparatively undisturbed by the current and pack-ice driving towards the south, are the places the Eskimos would mainly choose for occupation. At such places the fjord-ice or the even winter-ice remains unbroken for three parts of the year, and it was this condition which enabled the Eskimos to control wide areas by means of their dog-sledges.

The winter-ice forms about the 1st of October and from that time bears well to about the middle of June, but with good dogs — in cases of necessity — it is passable so late as early in July. The final breaking up takes place late in July or early in August.

During the summer the Eskimos have most probably sailed on the open water in their kayaks and women's boats, but the extent of the sea voyages were necessarily much more restricted than the sledge journeys. As one of the more important reasons for this I may point out that, for example, though a sledge journey along a coast is quite possible in a fog, a similar attempt with a kayak or

[1] Cf. SCORESBY 1: pp. 333, 336; SCORESBY 2: pp. 201, 340; PANSCH: p. 53; PETERM. MITTH. 1870: p. 418; RYDER: pp. 51, 283 and AMDRUP 2: p. 289.

[2] MYLIUS-ERICHSEN writes: "The Eskimos keep to the margin of the coast.... It is only where the fjords are frozen over in winter, that the Eskimos keep in the fjords. Otherwise they live only on the outer margin of the coast, its islands and rocks. Compare for example the contrast between the South Greenlanders and the North Greenlanders. The district round Egedesminde forms here the transition between the two".

[3] Cf. LYON: p. 72.

women's boat would be bound with great risks; in the latter case such a fog blots out all the certain marks of the situation and one loses the feeling with the coast, which is so necessary for all to go rightly; for the rest, the relation between the extent of the open water and the passable ice is such, that the boat journeys must for this reason alone be very short.

The settlements visited by our Expedition can be divided naturally[1] in my opinion into 6 districts, which are separated from one another either by places difficult to pass, such as Nordost-Rundingen, Mallemukfjeldet or Jøkelbugten, or by stretches which for other reasons have not been suitable for occupation[2] and on which therefore we now find only primitive shelters here and there for use during hunting.

The districts are the following:

District I. The land round Hagens Fjord (lat. 82°).

District II. Danmarks Fjord (lat. 82°—81°).

These two places probably contain settlements of much greater extent than our travellers have seen.

District III. Ingolfs Fjord (lat. 80½°).

Here we found stone remains on both sides of the mouth of the fjord. The inner parts of the fjord were not investigated.

District IV. Skærfjorden (lat. 77½°).

This subdivision might almost be regarded as a combination of a fjord-complex and land which lies under the shelter of a promontory. Stone remains were found in the eastern part of the district. The fjords were not investigated closely.

District V. The neighbourhood of Kap Bismarck (lat. 76¾°).

This subdivision was best investigated. Stone remains were found on the east coast of Germania Land, along the north side of the extensive Dove Bugt, on the islands and outstanding rocks in the Bay and on the land west of Store Koldewey.

District VI. The coast between Shannon Ø and Clavering Ø (lat. 76—74°).

This subdivision was not very closely investigated and lies in part beyond the sphere of operations of the Expedition.

[1] Cf. Garde 2: pp. 169, 170. [2] Cf. Amdrup 1: p. 240 and Amdrup 2: pp. 294—95.

The localities where remains were found by the Expedition.

District	Place	lat. N.	long. W.	Winter-houses	Tent-rings	Shelters	Traps	Permanent meat-depots	Temporary meat-stores	Fire-places	Refuse places	Graves	Receptacles at graves	Remains of children's playthings	Rests for women's boats	Rests for kayaks	Cairns	Hollow cairn	Depot house	Hare barrier	Stone ovals	Built-up stone circles	Other stone remains
I	Kap Peter Henrik	82° 00′	25° 10′	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
II	W. of Kap Holbæk	80° 50′	26° 50′	..	..	..	1	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..
III	Sophus Müllers Næs	80° 49′	14° 25′	1	yes	..	..	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Eskimonæsset	80° 26′	15° 48′	1	yes	..	..	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Fældestrand	80° 19′	16° 12′	..	yes	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
IV	Kap Philippe	77° 38′	17° 45′	..	..	..	1	c. 8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Kap St. Jacques	77° 36′	18° 12′	..	7	..	..	..	5	..	..	..	..	..	..	..	1	..	..	..	..	..	1
	Kap Amélie	77° 31′	19° 12′	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Rosio	77° 18′	18° 25′	..	3	..	..	..	c. 6	..	..	..	..	..	..	..	..	..	..	..	..	..	..
V	Thomas Thomsens Næs	77° 11′	18° 14′	..	many	1	1	2	2	3	..	..	..	..	..	3	..	..	..	..	..	..	2
	Kap Steensby	76° 55′	18° 15′	..	8	..	..	..	2-3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Hunting ground N. of Syttenkilometernæsset	76° 51′	18° 20′	..	1	..	2	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Syttenkilometernæs	76° 49′	18° 21′	16	15	..	..	8	c. 10	3	..	..	..	..	..	3	..	..	..	..	..	..	5
	Between Syttenkilometernæsset and Øksebladet	—	—	..	yes	..	1	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	N. W. of Øksebladet	76° 46′	18° 28′	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Ørnens Ø	76° 44′	18° 30′	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Kap Udkiggen	76° 43′	18° 29′	..	3-4	..	..	..	3-4	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Kap Bismarck	76° 42′	18° 35′	..	c. 10	..	..	yes	yes	1	..	..	..	..	..	..	..	1	..	..	..	..	3
	Renskæret	76° 41′	18° 34′	6	yes	yes	..	many	yes	yes	..	..	..	..	3	..	..	..	..	..	..	..	..
	Maroussia	76° 40′	18° 33′	5	4	..	..	many	many	..	1	..	..	..	..	..	..	..	..	..	..	..	..
	Kap Christian	76° 37′	18° 38′	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sonja Havn	76° 37′	18° 39′	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	c. 10	yes
	Rocky islet at Lille Koldewey	76° 39′	18° 41′	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Danmarks Havn with immed. neighbourhood	76° 46′	18° 45′	..	49	6	15	12	33	9	..	..	..	1	..	1	2	..	..	1	..	..	2
	Baadskæret	76° 45′	18° 51′	..	11	..	13	10	9	1	..	..	..	..	..	1	..	..	..	..	..	..	..
	Kap Helgoland	76° 43′	19° 10′	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..

The localities where remains were found by the Expedition.

District	Place	lat. N.	long. W.	Winter-houses	Tent-rings	Shelters	Traps	Permanent meat-depots	Temporary meat-stores	Fire-places	Refuse places	Graves	Receptacles at graves	Remains of children's playthings	Rests for women's boats	Rests for kayaks	Cairns	Hollow cairn	Depot house	Hare barrier	Stone ovals	Built-up stone circles	Other stone remains
V	E. shore of Stormbugt	76° 47′	18° 52′	6	24	..	2	many	many	..	..	4	2	3	..	..	..	..	..	..	..	..	..
	Head of Stormbugt	76° 49′	19° 09′	..	1	1	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Rocky islets in Stormbugt	—	—	..	4	4	yes	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Stormnæs	76° 48	19° 12′	..	yes	many	4	yes	yes	2	..	..	..	..	..	..	..	..	..	..	..	..	..
	Snenæs	76° 49′	19° 21′	13	8	2	13	many	many	..	..	3	..	2	..	..	..	..	..	..	..	..	..
	Farsunds N. E. coast	—	—	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Lumskebugten	76° 55′	19° 49′	..	..	12	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bastionerne	76° 56′	20° 11′	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Mouth of Lakseelven	76° 55′	20° 10′	..	2	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
	Beach W. of Hvalrosodden	76° 56′	20° 16′	..	2	..	yes	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
	Sælsøen	76° 58′	20° 14′ 20° 16′	..	12	1	3	25	4	2	..	..	..	2	..	..	..	..	..	..	10	..	many
	Rypefjeldet	76° 56′	20° 22′	10	48	13	13	c.27	c.18	7	..	1	3	2	..	1	..	..	..	..	..	..	4
	Mørkefjord	76° 56′	20° 58′	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Væderen	76° 52′	20° 38′	..	yes	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Carl Hegers Ø	76° 28′	21° 31′	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Tvillingøen	76° 22′	21° 09′	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bælgen	76° 21′	20° 11′	..	yes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Kap Peschel	76° 14′	19° 56′	..	4	5	..	2	8	..	..	1	..	..	..	..	..	..	..	..	..	..	..
	Paaskenæsset	76° 10′	19° 50′	..	5	..	..	..	3	..	..	..	..	1	..	..	..	..	..	..	..	..	..
	Vesternæsset	76° 04′	19° 54′	..	3	1	..	..	6-7	..	..	1	..	..	..	..	..	..	..	..	..	..	2
	Depotskæret	76° 03′	19° 51′	..	..	yes	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..
	Stationsø	76° 02′	19° 57′	..	2	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..
	Kap Arendts Næs	75° 57′	18° 43′	..	7	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..
VI	Coast N. of Haystack	75° 50′	19° 40′	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Haystack	75° 43′	19° 24′	..	12	2	..	3	7	1	..	..	..	..	..	1	..	..	..	..	..	..	1
	Hochstetter's Vorland	75° 28′	19° 27′	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Muschelberg	75° 09′	19° 51′	..	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	Kap Buch	75° 08′	19° 29′	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	W. side of Shannon Ø	75° 09′	18° 52′	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	Kap David Gray	74° 58′	18° 31′	4	..	..	1	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..

Translation of some expressions used in this work.

Baadskæret = Boat Reef.
Bastionerne = The Bastions.
Brystet = The Breast.
Bælgen = The Bellows.
Byggerester = Stone remains.
Depotskæret = Depot Reef.
Fangstplads = Hunting ground.
Farsund = Fairway.
Foraarsboplads = Spring settlement.
Fældestrand = Shore of Traps.
Gravelven = Grave River.
Harefjeldet = Hare Hill.
Hvalrosodden = Walrus Point.
Jøkelbugten = Glacier Bay.
Kap Udkiggen = Cape Look-out.
Lakseelven = Salmon River.
Lille Snenæs = Little Snow Naze.
Lumskebugten = Wily Bay.
Maatten = The Mat.
Mallemukfjeldet = Mallemuk Hill.
Mørkefjord = Dark Fjord.
Nioghalvfjerdsfjorden = Seventy-nine Fjord.
Nordost-Rundingen = North-East Rounding (flat promontory).
Orgelpiberne = Organ Pipes.
Orienteringsøerne = Recognition Islands.
Paaskenæsset = Easter Naze.
Renskæret = Reindeer Reef.
Rypefjeldet = Ptarmigan Hill.
Skærfjorden = Reef Fjord.
Snenæs = Snow Naze.
Stationsø = Station Island.
Stormbugt = Storm Bay.
Stormelv = Storm River.
Stormkap = Storm Cape.
Stormnæs = Storm Naze.
Syttenkilometernæsset = Seventeen-kilometer Naze.
Sælsøen = Seal Lake.
Taarn = Hollow Cairn.
Termometerfjeldet = Thermometer Hill.
Terneskæret = Tern Reef.
Tvillingøen = Twin Island.
Varderyggen = Cairn Ridge.
Vesterdalen = West Valley.
Vesternæsset = West Naze.
Vestre Havnenæs = West Point of Harbour.
Væderen = The Ram.
Øksebladet = Axe Blade.
Østre Havnenæs = East Point of Harbour.
Ørnens Ø = Eagle Island.

Muschelberg (Germ.) = Mussel Hill.
Teufelkap (Germ.) = Devil's Cape.

Bugt = Bay.
Dal = Valley.
Elv = River.
Fjeld = Hill.
Halvø = Peninsula.
Havn = Harbour.
Isfjeld = Iceberg.
Kap = Cape.
Kyst = Coast.
Næs = Naze or Point.
Odde = Point or Tongue.
Pynt = Point.
Skær = Reef or Rocky islet.
Sund = Sound.
Sø = Lake.
Ø = Island.

Vorland (Germ.) = Fore-land.

II. Nature of the discoveries.

Before beginning the description of the settlements, I may make a few remarks on the more characteristic stone remains I have found.

Winter-houses. These were of the ordinary Eskimo type and intended for one — at most two — families (Pl. II). At no place did we find houses built for several families, as is the case for example at Angmagsalik and on the west coast of Greenland.[1]

As usual the situation of the houses was often on a slope reaching down towards the sea, but this is far from being the case at

Fig. 1. Winter-house 317. East shore of Stormbugt.
Seen from the N. E. The house has been partially dug out. The passage runs obliquely backwards to the right; the side wall seen in the picture bulges outwards near the front wall; one of the roofing stones in the opposite wall is projecting; the two walls are of the same height.
(Photo. by A. Lundager).

all times. The local conditions, presence of stones and rocks etc., often determine the form of the interior of the house and always influence this.

The small supply of drift-wood (cf. Syttenkilometernæsset) has

[1] On the other hand, they seem related to those found by Dr. Hammar in Franz Josephs Fjord, by Captain Ryder in Scoresby Sound and by Captain Amdrup south of the latter. Cf. Scoresby 1: pp. 208—10; Pansch: p. 54; Koldewey: I, pp. 590—94, 594 illustr.; Ryder: pp. 296—301, 297 illustr. and Nathorst: pp. 263, 342—43, 343 illustr.

resulted in almost all the house-ruins investigated having not a bit of wood in the structure of the roof. We see that the Eskimos have been obliged to content themselves with stone for their buildings and the genius displayed in their construction is often surprising. The structure of the roof further was quite thin and light, and it is probable that the snow — in addition to a thin layer of earth above the roof-stones — has helped to keep the dwelling warm. The walls were built of stones (turf was never used) very carefully set up (fig. 1); nowhere however was there so much remaining that we could find traces of the window opening. The side walls were often not even, but bent outwards at the front part, so that a more or less distinct side-room was formed (cf. fig. 1 and Pl. II), in which was found refuse from the meals and in the refuse often broken-off points of weapons, broken kitchen utensils and such like. In several cases also a small niche was found above the entrance (fig. 33). The absence of wood was also apparent in the construction of the platforms. These as a rule were made entirely of gravel but were covered usually with flat stones. The effect of the gravel was that water and other dampness could not collect on the platform but filtered through. At some places however they had to be satisfied with earth instead of gravel. The side platforms have been of the same height as the main platform. The floor likewise was usually paved with flat stones; it sloped evenly down towards the bottom of the house-passage. The passage was straight as a rule, more rarely it had a bend. For the side-walls of the passage large pieces of rock have been used; for the top, flat stones often of considerable size and weight and much heavier than the roof-stones of the house.

Tent-rings.[1] The tent-rings were of different form; oval, circular or square.

The size of the edging stones was very variable in the different tents,[2] and they might be close together or at a distance from one another.

The meaning of the large stones in a tent-ring was, in my opinion, that the tent was intended to stand at the same spot for a long time or that the tent material has been more than usually short in proportion to the size of the tent.

[1] Cf. PANSCH: p. 55; KOLDEWEY: I, pp. 595—96; RYDER: p. 301, 302 illustr. and AMDRUP 2: p. 328. [2] In speaking of large, ordinary or small stones in the following descriptions of tent-rings, meat-depots etc. I mean respectively stones a man can lift or thereabout, stones the size of the head and stones the size of the fist or a little more.

The quite small stones used in some of the tent-rings examined by me puzzled me somewhat; they might have been able to keep down a European canvas tent with bottom to it, but hardly so far as I could see an Eskimo skin tent. Nevertheless they were Eskimo tent-rings, and I imagine therefore, that they were put up in the spring-time when it was not yet possible to break larger stones loose from the frozen ground. Possibly, then, blocks of snow, sledges etc. formed the rest of the weight. The tents used here however have not been very high.

Further, it may be said, that the stones round the margin were in general so regularly placed, that we may conclude that these now

Fig. 2. Tent-ring 353 with compact stone-work. East shore of Stormbugt.
(Photo. by A. Lundager).

bound an area which is not appreciably larger than the ground-area of the tent, for which it had formerly been used. If the stones, namely, had been removed by force from the tent covering, they would not have been found now in such a regular and neat position as is the case. That it was the women, who at that time removed the tent stones and packed the tent, is a fact we must be thankful for, as we are thus enabled at this day to form a picture of the extent of the ground taken up by the tents used by the Eskimos.

Generally there is some distance between the single stones in a tent-ring, but we also find rings in which the stones have obviously been placed with care quite close together (fig. 2). These closely

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placed stones have undoubtedly not served as ballast for the tent covering, but stood immediately inside the tent skin[1]; in one case (tent-ring 48,[2] Thomas Thomsens Næs) the ballast for the covering was seen as a more scattered ring of stones lying 25—40 cm. outside the edge of closely placed stones.

In general, though not always, the stone ring broke off at the place where the doorway has been. At this spot two parallel rows of stones sometimes ran outwards like a sort of entrance or inwards into the tent. Where a single stone lay in the middle of the doorway, this may have been used to hold the front curtain down.

Fig. 3. Tent-ring 75 with characteristic platform-edge. Syttenkilometernæsset. The platform has been levelled with care. In front the stone-work has been disturbed. (Drawing by the Greenlander TOBIAS GABRIELSEN).

The front edge of the platform might be formed by stones, but just as often no stone edge could be seen and the position of the platform could then not be indicated. In tent-rings with platform-edge one can often see that the Eskimos have taken the trouble to level the place inside this much more than the remaining floorplace in front (fig. 3). The edge of the platform consisted in most cases of a row of stones laid across the floorplace from side to side, of the same size and at the same distance from one another as the tent stones. In some very old and broken down tent-

[1] Cf. SCORESBY 1: p. 185; GRAAH: p. 73, Pl. VI; HOLM 2: p. 71 and AMDRUP 2: p. 327.

[2] For the numbers in the text see: III. Description of the settlements and stone remains.

rings it consisted of two rows of flat stones standing on end (fig. 4). The place between the two rows of stones was filled up with earth and turf, or small rooms in which various things could be kept were formed by means of other stones placed at right angles to the platform edge.

In some tent rings a collection of stones, mostly flat, was found almost in the centre of the floorplace (fig. 19). It is probable that the lamp stood here.

Regarding the tent-rings, lastly, my observations seem to indi-

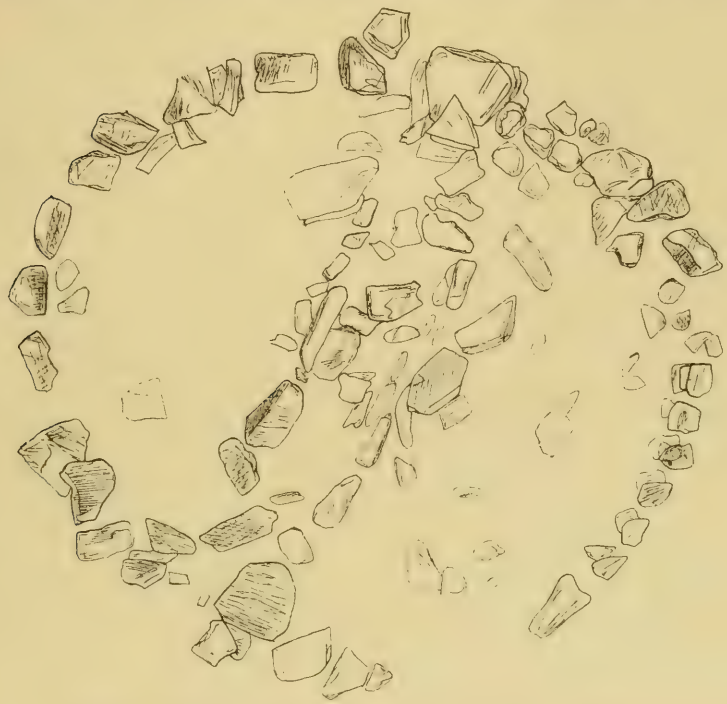

Fig. 4. Tent-ring 30 with double platform-edge. Rosio.
The double platform-edge has been greatly disturbed. (Sketch by Aage Bertelsen).

cate that the care with which a tent was formed (position and formation of the stones, platform-edge, platform itself and many other things) stood in converse relation to the number of things found. This I set in connection with the sense of order of the dwellers,[1] the orderly taking their property away with them, whereas we have to thank the untidy people for many a good thing.

Under the stones of the tent-rings were sometimes found pieces of wood[2] and whalebone, which had been kept there, and one time we found a new, unused harpoon-point of slate under a heavy stone about 75 kg. in weight.

[1] Cf. Amundsen: pp. 148, 215, 216, 220, 222. [2] Cf. Amdrup 1: p. 95.

Shelters.[1] By a shelter I understand in the following a small place surrounded by stones, often not larger than to give room for one person in a lying position.

I believe that these places have served as shelter for one or two men on a hunting excursion, and they might thus quite well be called small tents,[2] but their small size and their more temporary character[3] induced Mylius-Erichsen to distinguish them under a special name, and I think it best to retain this arrangement.

There are transitional stages, however, which with equal right might be called tents or shelters; these are indicated as shelters here; they may have a platform marked off by a stone edge. One

Fig. 5. Shelter 556. Rypefjeldet.
Seen from the north. This shelter is constructed of large pieces of rock: the two pieces placed obliquely in the left corner were 0.75 M. high. The nearest wall has fallen in.
(Photo. by the author).

or two of the walls may be up to 1 meter high, built of stone[4] or pieces of rock standing on end (cf. especially Renskæret and Rypefjeldet). We may suppose, that the high walls in such a shelter (fig. 5) or in such a tent — whichever we think best — must have been raised owing to the great lack of driftwood here. It has often been impossible to procure sufficient wood for building the tent above the ground in any other way, than by making the upright

[1] Cf. Mc. Clintock: p. 152; Amundsen: p. 148; Steensby: pp. 287, 288 and Knud Rasmussen 1: p. 90. [2] Cf. Steensby: pp. 325—26, 327 (Fig. 18). [3] Cf. Lyon: p. 74.
[4] Cf. Parry: p. 90.

walls serve as supports for short rafters. Other shelters are walls which the hunter has used to watch the prey (e. g. Muschelberg).

Near or in the shelters I have a few times (563—564—571—572) found many white pieces of quartz (fig. 6) and once (701) a collection of red and white stones.[1] In tent-rings on the beach at Kap Bismarck (115) and other places (186—212—548), as in fox traps on Rypefjeldet (588) and at Snenæs (428), I have likewise found conspicuous white stones.

In the beginning I took the presence of these white pieces of quartz to be due to chance or children's playthings, but later I

Fig. 6. Shelter 572. Rypefjeldet.
Seen from the N. E. The one wall is a large, solid rock. White pieces of quartz were found in the shelter; these are seen most distinctly along the nearest wall and in the small jutting-out part of the wall. In the background to the right Væderen. (Photo by the author).

found them at places where it was quite impossible for children to have played and especially in hunting shelters. A secluded shelter (657, Pl. III) was entirely built of white stones and pieces of quartz.

If we imagine a shelter to have been built by a single hunter, it is impossible to believe that he has used these white stones for the decoration of his layer. It was rather superstition[2] which led

[1] Cf. Koldewey: I, p. 564 and Ryder: pp. 289—90. In some cases it is probably shelters which Captain Ryder has seen; in other cases, children's playthings.

[2] Cf. Knud Rasmussen 1: p. 159 and Knud Rasmussen 3: p. 145.

to their presence there — it may have been, for the sake of good hunting or to protect the dwellers in the shelter against evil spirits.

In the neigbourhood of settlements are found other collections of white stone, which may possibly have been children's playthings.

After reading the report on the "Gjøa" Expedition I am of the opinion that several of the shelters have a good deal in common with the graves figured there[1]; but I still believe that the situation of the stone fences mentioned by me was such, that they could only have been shelters and not graves. For the rest, I also had the idea in the beginning that bodies had been placed in these stone

Fig. 7. Trap 357. East shore of Stormbugt.
The falling door is resting on the locking stones. (Photo. by A. WEGENER).

fences, but by the end of my work in the field this idea had long been displaced by the view that they were shelters.

Fox-traps. Traps were found in such large numbers that they must certainly be counted among the principal hunting apparatus of the Eskimos. In addition to being found near the meat-depots at the tent places and graves, they also occurred everywhere in the open, high up on the fells or but little above the margin of the beach, and far inland or near the coast.

The traps were for the capture of foxes; bear traps were not

[1] See AMUNDSEN: pp. 162—163, illustrations.

found. There can only be talk of winter hunting in the case of these traps, as in summer the fox is not inclined to go into traps, especially as there is sufficient food for him at this time of year, in the form of eggs, lemmings and birds. Further, the summer skin of the fox is not worth striving after, as it is then thin in the hair, brittle and unsightly.

The traps are always placed in such a position, that they can be watched conveniently from a winter settlement, and naturally the discovery of a fox-trap indicates, that Eskimos have passed the winter within a fairly reasonable distance — whether in stone and earth houses, or in snow houses which have left no trace.

Fig. 8. Permanent meat-depot 118. Kap Bismarck.
The covering stones have been removed. The solid rock is used in the formation of the depot. (Photo. by the author).

Traps were found which fitted in exactly with their surroundings (fig. 7), others again were very conspicuous and almost dominated the character of the country (fig. 30).

A trap is built[1] as a rule on solid ground or on a large stone. It consists of two long walls and a back wall built of large stones suited for the purpose and is covered over with stones, of such a size presumably that the animal could not raise them up. A pointed stone is inserted into the back wall and projects 8—10 cm. into the trap; on this was placed the bait which was connected by a strip

[1] Cf. Parry: p. 514; Lyon: pp. 147, 339; Ryder: p. 312 and Steensby: 298.

of hide to the falling stone, which consisted of a thin plate of stone. In front, in continuation of the lateral walls, a stone was placed on each side (locking stone). When the fox snapped up the bait and the falling stone thus slipped down into its place to close the entrance, the locking stones prevented it from being shifted.

From Baadskæret (lat. 76° 45′, long. 18° 51′) I brought home with me a trap (279) which has now been set up in the ethnographic collection of the National Museum in Copenhagen.

Another kind of trap (a peculiar tower-like structure) will be described later (Kap Bismarck).

Fig. 9. Temporary meat-store 92. Syttenkilometernæsset.
Seen from the south. The temporary meat-store is seen in the foreground. Behind is the level beach, well-suited for a tenting-ground, with the tent of the Expedition. (Photo. by the author).

Meat-stores or depots are constructed of stone, as a rule above the ground; the stones are built up with care or heaped together.[1]

According to this difference in the mode of building, the meat-stores are in the following divided into two groups, the permanent and the temporary stores.[2]

By permanent meat-stores or depots I mean the structures which have been constructed with care of accurately fitting stones, and

[1] When it is stated here, for example, that the form of a meat-store is oval, circular etc., the reference is to the ground-plan; similarly also for other stone remains.

[2] Cf. PANSCH: p. 55; KOLDEWEY: I, p. 596; RYDER: p. 298 and NATHORST: pp. 343—44.

which presumably have served as fixed depots for the booty. They often have a considerable size and strength (fig. 8); but on the other hand, I also include here the small structures, which could at most contain a hare, perhaps only a bird (cf. for example, Baadskæret), and have thus possibly not been intended for storing the meat, but rather to hide something or another, bone materials, small things and such like; it is not uncommon also to find pieces of wood[1] and the like, things of value to the Eskimos, in the large, permanent meat-depots. Several had a great resemblance to the receptacles found at graves, for the preservation of the utensils of the dead, but were situated at places where no graves occurred.

The temporary meat-stores (fig. 9) are the loosely built heaps of

Fig. 10. Fire-place 101. Syttenkilometernæsset.
(Drawing by the Greenlander Tobias Gabrielsen).

stones, constructed probably by the Eskimo as the first resting place for his booty. He then surrounded it with stones, placed quite close to it, and then piled up the stones until it was covered as well as the time, locality etc. required and permitted. They have only been intended, I believe, to ensure the safety of one particular capture against animals, until it could be removed, and have hardly been used constantly.

The meat stores were found on the tent places and winter settlements, as also at occasional places along the coast, off which the hunting has been carried on. Fox-traps were often found in the neighbourhood. In one case (534 and 535) a quite small, permanent store was situated so close to a fox-trap, that there is reason to consider that the rotten meat it contained was intended to act as an enticement for the foxes.

[1] Cf. Amdrup 1: p. 95.

Fire-places. The fire-places (Fig. 10) are usually square in shape, surrounded on the three sides by a single or double layer of stones; the opening shows the direction of the wind, when the place was used. They are small, generally not larger than the pot or utensil used.

Refuse places. In and round about the stone remains we found as a rule a good deal of refuse — mainly bones (fig. 11), but also broken weapons, utensils and the like.

A large quantity of the bones was collected and brought home,

Fig. 11. Bones round about winter-house 313. East shore of Stormbugt. Seen from west. (Photo. by A. LUNDAGER).

from which we learn that the Eskimos have captured and eaten the following species[1]:

Anser segetum, Bean-goose
Lagopus mutus, Ptarmigan
Larus glaucus, Grey gull
Lepus variabilis, Arctic Hare
Canis familiaris, Dog
Ursus maritimus, Polar bear
Trichechus rosmarus, Walrus
Erignathus barbatus, Bearded seal
Phoca foetida, Fjord seal
Rangifer tarandus, Reindeer
Ovibos moschatus, Musk-ox
Balaena mysticetus, Greenland whale
Monodon monoceros, Narwhal
As also fish.

Human bones were found in a few winter-houses (319—406—407). Curiously enough no certain remains of foxes' bones were discovered.

[1] Determined by Vice-Inspector HERLUF WINGE.

Graves. We found 12 graves, but did not examine all of them closely. They were usually well-built stone structures with many or heavy stones above[1]. In most cases the body had been bent double and sewed up in a skin. The graves are now partially filled with gravel or small stones. The choice of direction seems to have been accidental. The grave implements were found partly in, partly outside the graves or between the stones of the graves. Fox-traps had been built about the grave places for the foxes enticed by the smell of the bodies, which shows, that the Eskimos left no occasion unused for their hunting.

The graves were constructed above the ground (fig. 12); they

Fig. 12. Grave 323. East shore of Stormbugt.
Seen from the north. Below, to the right of the grave is seen the receptacle 324 for the grave articles. (Photo. by the author).

were usually found in the neighbourhood of the winter settlements, so placed that the smell from the graves would be driven away from the settlement by the prevailing N. W. wind.

Remains of children's playthings were found almost everywhere. We find that they have very closely copied the shelters (416—417) and meat-depots (178—179) of their parents, but other stone structures also occur (fig. 13), in which the children's own ingenuity displays itself in the figures.

Playthings of an older character were found, on even ground

[1] Cf. Scoresby 1: p. 213; Pansch: p. 55; Koldewey: I, pp. 594—95; Ryder: p. 339; Nathorst: p. 162 and Amdrup 2: p. 328.

with small gravel, which were built of flat stones not well suited for tent stones. A kayak was represented in the following manner; first a row of stones was laid out (cf. 336, fig. 13) in form almost like the keel of a kayak and in the centre of this a circle was then made to represent the opening or well; thus the well came to lie in the wrong direction, a mistake to which we can readily find parallels in the first attempts at drawing of our own children. At one place the figure represented a vertical section through a kayak with the kayak man (cf. 639, fig. 13). In the neighbourhood of playthings made of flat stones, there was often found an ordinary, rounded boulder which has probably been used as a sort of stool.

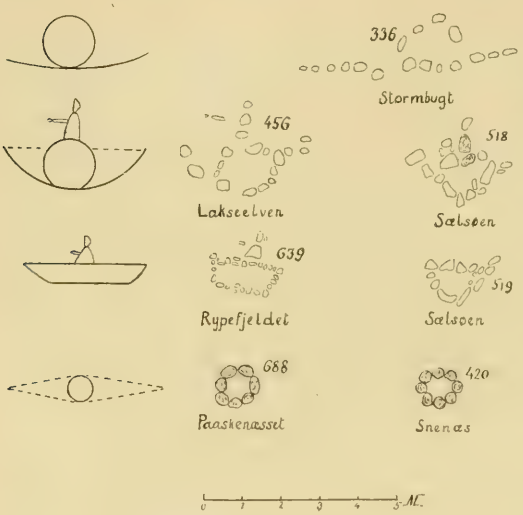

Fig. 13. Remains of children's playthings.
To the left is a schematic outline of the figure the plaything is supposed to represent. (Sketch by the author).

Later in appearance seemingly are two small stone-rings[1] (cf. 420 and 688, fig. 13) formed of ordinary boulders and apparently representing kayak wells, from which the children have exercised themselves in casting the spear and lance. The remainder of the kayak has thus simply been imagined. The collections of pieces of white quartz in the neighbourhood of settlements also came possibly, as mentioned above, from children's games in some cases (329—339—742).

Boat rests for the women's boat and kayak, cairns, a depot-house and several others will be discussed more closely under the separate settlements; yet it may be remarked here, that in North-East Greenland three[2] pillars have usually been made for each set of rests of women's boat and kayak; the reasons for this are possibly, that the women's boats owing to the lack of suitable material have not been so solidly built and that the kayaks used have been of unusual length, to judge from the measurements of the rests.

[1] Cf. KOLDEWEY: I, p. 564 and RYDER: pp. 302—03.

[2] Cf. HOLM 1: p. 160; PARRY: p. 506 and AMUNDSEN: pp. 239, 219 illustr.

III. Description of the settlements and stone remains.

The numbers in the text refer to the order in the Table of the stone-remains. The animals mentioned are those of which bones were found at the place indicated and brought home. Where nothing else is said, the measurements are of the interiors. The true directions of the compass are given. Heights and distances are in part estimated. In the sketches the scales employed are usually the following: for settlements, 1 cm = 100 meters (M), and for stone remains, 1/2 cm = 1 meter (M).

District I. The land round Hagens Fjord.

Kap Peter Henrik (lat. 82° 00′, long. 25° 10′). Tent-rings were found here (1).

Our acquaintance with these is confined to HØEG HAGEN's sketches which were brought by JØRGEN BRØNLUND to the station on Lamberts Land. In his diary BRØNLUND does not mention this discovery.

We find from the same sketches that Independence Sound is open in warm summers as far in as off Hagens Fjord, as an iceberg is marked on them ca. 20 kilometers E. N. E. of Kap Peter Henrik; this iceberg has become detached from one of the glaciers. But this does not mean that the Sound itself is open; on the contrary, it is said to be always or almost always frozen over. We may suppose nevertheless, that it is only in specially warm summers that completely open water is found in here off the fjords, whereas open "land water" probably occurs every summer along the margins of the fjords, produced for a great part by the many rivers which send out a quantity of warm water over the fjord-ice nearest the coast.

Captain KOCH describes these regions as follows:

"Independence Sund is probably never open to the east of Hagens Fjord. Of the conditions further in we know practically nothing (PEARY). On the other hand, there is reason to believe that the ice in the interior of Danmarks Fjord and Hagens Fjord disappears each year and there is open water along the coast further out in these Fjords. In the interior of Hagens Fjord there is a calving glacier. On one of HAGEN's sketches a station "Isfjeld" is indicated in the mouth of Hagens Fjord. If there is really an iceberg here, it may be considered as having come from the glacier in the interior of the fjord, and this might indicate therefore, that the fjord may at times be quite open. (Tent-rings at Kap Peter Henrik.)"

Something similar is said by ASTRUP[1], who writes:

"The ice which covered the extensive bay[2] was apparently quite even. Far out towards its centre we could detect dark patches, which were un-

[1] ASTRUP: p. 210. [2] Independence Sound seen from Navy Cliff towards the east and north-east.

doubtedly due to numerous pools of water which in summer form on every sheet of ice where this is in process of melting. Numerous icebergs scattered over the surface as far as we could see, bore witness that the sea even in these high latitudes must be open every year for a short time in the summer."

(It was in the first days of July (1892) that PEARY and ASTRUP reached Navy Cliff.)

District II. Danmarks Fjord.

West of Kap Holbæk (lat. 80° 50', long. 26° 50'). Permanent meat-depots were found here and 1 fox-trap.

We know from HØEG HAGEN's chart that Eskimo permanent meat-depots (2) were found at the head of the bay west of Kap Holbæk.

Regarding earlier occupation and the conditions in Danmarks Fjord BRØNLUND's diary gives the following information:

"20th May[1]. — — As we gradually penetrated further into the fjord the ice became easier going. Well on in the evening we called a halt, having travelled about 9 Danish miles[2]. Was this a fjord or a sound we were in — that was what we wished to know; to-morrow we may expect to learn. At the place where we rested, we found stones built up into a wall[3] and a fox-trap[4] — the work of human beings from long vanished times. On the other hand we saw no remains of houses or tent-rings — — —."

Further:

"21st May. — — In the afternoon we pushed on further. After proceeding about 2 miles (Dan.)[5] we reached to the head of the fjord. — — — Signs of musk-ox. — — — We slept a little without setting up tent. — — — Early next morning we set off to get out of the fjord. We found a piece of drift-wood. — —"

The place where the stone remains were found by the sledge-team is the same, to judge from all the evidence, as that indicated by HØEG HAGEN on the chart. On this he calls the stone remains "meat-stores", which is very likely correct, as they were probably the remains of permanent meat-depots.

The discovery of the fox-trap is of special interest, as it suggests — as already explained (p. 199) — that the Eskimos have overwintered in Danmarks Fjord.

The sledge-team of our Expedition did not find many stone remains in this fjord, because the summer's "land water" prevented them from getting into the coast except at a few places, and we may believe, that the results of this journey would have been much greater in ethnographical regards, had these conditions not compelled our people to travel out on the fjord, at a distance from the land.

[1] 1907. [2] Ca. 68 kilometers. [3] (2). [4] (3). [5] About 15 kilometers.

Regarding the conditions in Danmarks Fjord we know also from Brønlund's diary, that the following among others occur there, though only in small numbers: brent goose[1], ptarmigan, owls, hares, wolves, foxes, seals and musk-ox.

In a letter from Mylius-Erichsen to the Second-in-command of the Expedition we find:

"Lat. ca. 82° 03′. $^{28}/_{5}$ 07. — — There[2] we shot 22 hares, 4 ptarmigan and 21 musk-ox; found driftwood at the head of the fjord.

Also Eskimo ruins![3]

Shot at a wolf, saw two snowy owls etc. — — —"

For the rest Hagen's charts give a good idea of the topographical conditions.

Regarding the stretch between District II and District III we have the following information from Captain Koch:

"South of Nordost-Rundingen (lat. 81° 21′, long. 11° 40′) the low inland-ice extending right out to the sea offers good ground for travelling and at the same time the conditions for hunting at the sea improve. At lat. ca. 81° the conditions are so much better that occupation has been possible."

District III. Ingolfs Fjord.

Sophus Müllers Næs (lat. 80° 49′, long. 14° 25′). Here 1 winter-house, tent-rings and temporary meat-stores were found.

The fore-land is flat; the settlement was built on this. The screw ice goes close in to land.

About 100 meters from the beach there was a winter-house (4), which was much sunken in the ground.

Tent-rings (5) were seen quite close to the beach and several large temporary meat-stores (6), but comparatively few bones were found scattered about the tent places.

The temporary meat-stores were so large that Captain Koch and his comrades were able to put half a walrus in one of them. Several discoveries of implements etc. were placed in a depot at this place by the sledge-team of the Danmark Expedition.

Captain Koch's party had good hunting here after walrus and seals.

Eskimonæsset (lat. 80° 26′, long. 15° 48′). Here 1 winter-house, tent-rings and temporary meat-stores were found.

The settlement was situated on a point on the south side of a

[1] (*Anser torquatus.*) [2] In Danmarks Fjord. [3] (2 and 3).

fjord — Ingolfs Fjord — which may be open, in our opinion, in favourable summers. Captain KOCH adds however:

"— — that the summers in which the ice disappears must now be rare."

Tent-rings (7) and temporary meat-stores (8) were found near the beach (walrus, fjord seal, musk-ox and narhwal occurred here).

Possibly the point is a walrus point, that is a place on which the walrus climb up to sleep and sun themselves. Musk-ox were shot inside Ingolfs Fjord.

When the snow melted away in the early summer of 1907 the Greenlander TOBIAS found a very sunken winter-house (9) close to the tent-rings.

BRØNLUND's diary contains the following notes about this place:

"23rd April. We proceeded further[1], keeping to the foot of the ice almost the whole time. After we had passed round what we took to be a promontory, we stumbled upon some very old tent places and found there various articles, walrus heads and bones, and also the bones of a herring whale[2]."

Fældestrand (lat. 80° 19′, long. 16° 12′). A couple of tent-rings were found on the beach (10).

Further up on the land some traps were seen (11), which at first sight seemed to be cairns. They were very large, ca. 1—1·5 meter in height outside, and exceedingly well-preserved.

The two winter-houses found in this District (4 and 9) were very much sunken in the ground and certainly much older than the well-preserved houses in District V (the neighbourhood of Kap Bismarck), and even seemed to the Greenlander TOBIAS much older than any of the other winter-houses he had seen in East Greenland.

It is worthy of remark, that in this northern District we have only found houses which were so much sunk in the ground that their presence was only indicated by a very faint mark — a slight elevation above the ground; the ruins, namely, are but rarely so much overgrown with vegetation that they become distinct from the surroundings. If there had been any well-preserved houses, like those in District V, they would certainly not have escaped attention. We may believe therefore, that such do not occur in these parts.

The information regarding this District has been obtained from KOCH, BERTELSEN, TOBIAS, GUSTAV THOSTRUP and Dr. WEGENER. Further, MYLIUS-ERICHSEN describes the District in letters to the Second-in-command as follows:

[1] Towards the north in the spring of 1907. [2] (*Balaenoptera*).

"22/4 07. — — To-night we reached a point still further east than Kap Bismarck, probably lat. 80° 20′. 2 to 3 miles[1] (Dan.) further on we could see land and good sledge going on the beach on the land itself. We are quite unable to get further owing to the sea ice with open channels close to land.

Yesterday JØRGEN shot a bear.

Among the most important observations I may mention, that no trace of Eskimos was found north of Kap Amélie. I am becoming more and more positive, that — contrary to earlier views — Eskimos have never journeyed or could journey north round Greenland and down the east coast. The east coast natives must therefore have come round Kap Farvel from the west coast.

Open water is seen far to the east, outside the land, and the ice must break up every summer."

In a second, later letter we read on the other hand:

"Lat. 80° 42′ 6, long. ca. 16°. — — I am indeed glad of heart[2], but even more I am pleased that I have succeeded — against my own conviction — in finding Eskimo remains at lat. ca. 80° 24′ 6 near our previous tent place, a low gravelly point[3] which runs several miles (Dan.)[4] out from the southern side of a splendid fjord. Extremely well-preserved instruments of bone were found near the tent-rings, and a quantity of skulls of walrus — the teeth extracted — and a few bones of whale and narwhal show, that in summer the place must have much open water. — How interesting at these latitudes! Yesterday walrus breathing holes were seen on the ice and the skin of a new-born young seal was found in a bear's stomach.

Four miles[5] further on I have seen quite good sea ice for regular sledging. — —"

Regarding the open water it may also be remarked, that Captain KOCH on his return journey in June 1907 saw open water from lat. ca. 81° 24′ and as far as Mallemukfjeldet.

Between lat. ca. 80 1/4° and lat. ca. 77 1/2° no stone remains were found.

At lat. 80° 10′ and long. 16° 50′ lies Mallemukfjeldet. — As the name indicates, this is a cliff frequented by birds. It rises steeply out of the sea and is an effectual hindrance to passing along the coast in dog-sledges, as the open water often stretches right in to the cliff. At the end of April 1907 our people found passable ice off the cliff; in June of the same year open water and only a narrow, fairly steep snow-drift helped them past this critical point. Lastly, we know that in the middle of October 1907 there was open water close in to the cliff and no ice at the foot or snow-drift, so that it was impossible to get past the cliff in dog-sledges.

Holms Land along the north side of Dijmphna Sund (the coast west of Mallemukfjeldet) is well suited to Eskimo occupation. There

[1] 15 to 22 kilometers. [2] Because they had been able to make progress. [3] Eskimonæsset (lat. 80° 26′). [4] 1 Danish mile = 7·5 kilometers. [5] 30 kilometers.

is a flat fore-land and the same conditions for open water in the summer as at most other places on the coast. And the hunting — especially bear hunting — is good.

Our people (GUSTAV THOSTRUP and Dr. WEGENER) did not have the opportunity of examining the shores, but they do not doubt the presence of Eskimo remains there.

There might possibly be a settlement here, which owing to the difficulty of passing Mallemukfjeldet should be considered as a district by itself.

The fjord north of Lamberts Land — Nioghalvfjerdsfjorden — is believed not to be suitable for occupation. MYLIUS-ERICHSEN describes these parts in a letter to the Second-in-command of the Expedition as follows:

"Lat 80° 09′. 21/4 07. — — We are now face to face with some miles[1] of the worst screw-ice.

Large, open channels to the east and west, right in to the coast.

There is a bird cliff here.

Between lat. 79° and lat. 80° numerous bears give birth to their youngs.

Saw musk-ox excrement from the summer-time at lat. 79° 08′. Shot 8 hares, 6 ptarmigan and 9 bears. — —"

Between lat. ca. 79° and lat. ca. 78° we were not able to examine the coast of the mainland very closely, but it did not apppear to be inhabitable. The local conditions seemed to be such, that the possibilities of existence — even for so easily satisfied people as the Eskimos — are hardly present.

Jøkelbugten, which practically dominates this region, with its covering of "inland-ice outflow" does not tempt one to stay a long time, even if — though with dificulty — it can be traversed with dog-sledges. It is not probable, therefore, that traces of the Eskimos will be found anywhere here.

The wanderings and journeys of these have apparently taken place along the east side of the row of islands, which bound Jøkelbugten towards the sea. On our Expedition these islands were specially visited by BISTRUP and RING, without finding any stone remains however. But this was probably due in part to their somewhat forced journey along the snow-covered land, and not least to the fact, that the islands have probably been mostly visited by Eskimos whilst journeying, when they set up their tents on the ice, thus leaving no permanent sign.

According to the information given by BISTRUP, however, the east and south sides of a few islands, especially the Norske Øer, are well suited for a tent place, as the land is low here and reaches right to the screw-ice or the open water. A visit when the land is

[1] Danish miles.

free of snow will possibly discover stone remains, both here and at other places on the row of islands.

District IV. Skærfjorden.

Kap Philippe[1] (lat. 77° 38′, long. 17° 45′). Here ca. 8 permanent meat-depots and 1 fox-trap were found.

Kap Philippe is the most easterly point on Ile de France.

On this Island it is only the two outermost points east and west on the southern stretch of coast which have been suitable for occupation, and the most westerly point especially, Kap St. Jacques, has been suitable as a tent place, whereas the low, clay point, Kap Philippe, offers such heavy travelling in the summer owing to the mud, that it is probably not favourable as a camping ground. Nor did we find any tent-rings there but only some 8, almost equally large meat-depots (12). (Birds, walrus, fjord seal, narwhal.)

These depots lay at a height of a couple of meters above the sea, quite close to the shore and they were placed between and on both sides of two natural depressions on the coast line — almost like slips, where at high and low water it would be easy to drag up the heavy marine animals on to the dry land. The permanent meat-depots were 2—3 meter in diameter externally, constructed of large stones, and some were not empty. When we removed the covering stones, we found many bones at several places, mostly walrus bones, projecting out of the ice which filled the interior, but the conditions did not permit us to examine so closely as we wished.

On April 23rd 1907 there was open water round about the point on both sides. From the heights we saw a stretch of many square kilometers with new ice and openings in the ice. From Kap Amélie in March 1908 Captain Koch saw open water in a wide expanse at Kap Philippe. It is probably due to special currents that open water is often found here throughout the winter, and the possibilities for hunting would thus be greater.

The Eskimos have probably skinned and laid their booty in the depots at Kap Philippe, and then later transported it to the winter-settlements, unless these have been snow-houses on the spot, which is not at all inconceivable.

On the higher part of the Island, nearer towards Kap St. Jacques, we found a fox-trap (13)[2], 0·77 M. long, 0·25 M. broad and 0·30 M.[3]

[1] Cf. Amdrup 2: p. 239; Kollm: p. 563; Bergendahl: p. 343; Duc d'Orléans 2: p. 12 and Peterm. Mitth. 1905: p. 216. [2] Cf. Bergendahl: pp. 343 etc.; Duc d'Orléans 1: p. 228 and Duc d'Orléans 2: p. 12. [3] M. means meters everywhere.

high. It stood about 140 meters above the sea in a hollow near the raised plain on the south coast. The hollow, which was filled with snow, sloped towards the sea and the trap was built of uniformly large stones on a small, bare rock in the middle of the snow. The door of the trap was in its place.

On the high plain we had an excellent view over the ice. Here we found signs of ptarmigan, owls, hares, foxes, reindeer and musk-ox.

Tracks of many foxes and bears were seen along the south beach of the island and on a large ice hummock far out to sea we saw two large animals, walrus or seals.

Our main impression was that the hunting conditions to all appearance must have been good.

Kap St. Jacques (lat. 77° 36', long. 18° 12'). Here we found a camping ground with 7 tent-rings, 5 temporary meat-stores, 1 cairn and 1 "stone table". The sketch of the tent place (fig. 14) shows the relative situations of the stone remains.

This cape is a point about 1 kilometer long, which juts out in a westerly direction from the high southern shore of the Ile de France. It is composed of small pebbles, quite uniform in size, with 5 to 6 distinctly marked, earlier shore-lines. The Eskimo remains[1] found lay chiefly between the second and the fifth shore-line. The uppermost line I estimated to lie about 20 meters above the sea. The open water probably seldom penetrates right in to the shore at the settlement itself.

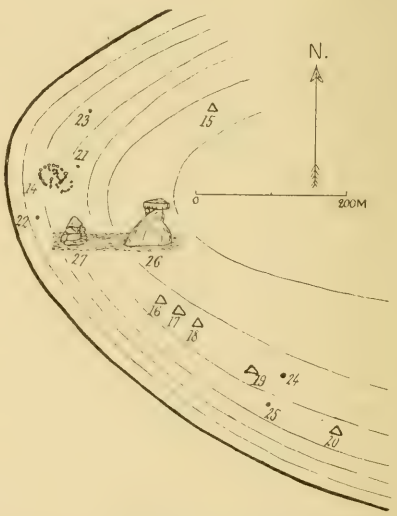

Fig. 14. Settlement on Kap St. Jacques. The curves represent earlier shore-lines. (Sketch by the author).

The best of the tent-rings (14, fig. 14) lay about 3 meters above the sea, was oval in form, 4·30 M. in north-south cross-section, 3·55 in east-west, and had two door openings towards the south; each of these was 0·58 M. broad and separated from the other by a row of stones, 1·25 M. long, which led into the house and consisted of 3 large stones about 0·25 M. high.

The platform formed the north-eastern part of the tent and was

[1] Cf. DUC D'ORLÉANS 1: p. 242 and DUC D'ORLÉANS 2: p. 15.

covered by fine gravel, whilst the remaining floorplace consisted of coarser gravel and small stones.

About the middle of the platform-edge, which for the rest was very indistinct, 5 stones formed a small square, the centre of which lay 1·25 M. from the back wall of the tent ring. The length of the platform-edge was 2·90 M.

Within the door on both sides lay some scattered stones, which possibly belonged to the ring. Under the stones of the ring we found fragments of skin and also some feathers.

Outside the tent-ring and to the right of the door opening we found the traces of a smaller tent, which has probably been a part of the larger. This smaller tent-ring was oval, 2·34 M. in east—west cross-section and 2·03 M. in north—south. The door, which opened towards the W. S. W., was 0·60 M. broad. Although the stones at the back of the tent had been removed, we could distinctly make out its form. The floorplace consisted of coarse gravel and small stones.

The remaining tent-rings may be described in the following table:

No.	Form	Height above the sea	Length [1]	Breadth	Remarks
15	—	12 M.	—	—	Not measured. Indistinctly marked. (Fjord seal)
16	circular	4 —	2·20	2·20	
17	circular	4 —	2·55	2·55	
18	circular	4 —	2·20	2·20	
19	oval	4 —	3·80	3·20	Unusually large stones. Door opening towards S. E.
20	oval	2 —	4·45	3·20	

In most cases the door opening was indistinct and no platform-edge was seen.

The temporary meat-stores were circular; their structure and contents are shown in the following table:

No	Height above the sea	External diameter	Bones found	Remarks
21	5	1·57	Fjord seal	Ordinary stones
22	3	1·88	Fjord seal	Ordinary stones
23	2	—		Not measured
24	4	2·85		Large stones
25	2	2·85		Large stones

[1] Where nothing else is said, all measurements are in meters (M.).

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On the place occupied by the tents we also found, as already mentioned, two other structures which claimed our interest, namely a "stone table" (26) and a small cairn (27).

These two, the "stone table" and the cairn, stood 100 meters east—west from one another and I took them at first to be of European origin — for measuring distances or such like — but after my return home Lieut. BERGENDAHL of the "Belgica" Expedition 1905 informed me, that the "stone table" and the cairn were not set up by him or the others taking part in this Expedition, the only Europeans known to have visited the island before us, and they were therefore in all probability built by Eskimos.

The "stone table" (fig. 14) lay 6—8 meters above the sea and was constructed of a large stone block (gneiss), on the top of which was laid a flat, whitish stone and the latter was also propped up by a round, red stone, so that the horizontal surface of the white stone formed a kind of slab for a table. Its height above the ground was 1·13 M., its thickness 0·11—0·13 M.; the length on the surface was 0·71 M., the breadth 0·47 M. The measurements of the round, red stone were 0·21 × 0·16 × 0·13 M. The ground plan of the large stone block was oval, 1·57 × 1·26 M.

The "stone table" has possibly been used to lay meat on, to keep this away from the dogs.

The cairn (fig. 14) was only 0·70 M. high and 0·65 M. in diameter at the ground. It was built of large and small stones, some of them flat. There was a large, round stone on the top. The cairn lay about 3 meters above the sea, near the outer point of the naze. Examination showed nothing in it.

Kap Amélie (lat. 77° 31′, long. 19° 12′). Here we found 3 fox-traps (28), which were not measured. They stood about 6 M. above the sea and about 25 M. from the beach, on a small, mossy, triangular patch, close to the east of the Cape. Surrounded as they were by large stones, they fitted in well with the ground. Two of them had the opening towards the sea, the one towards the S. E., the other towards S. W. (according to information from JARNER).

Rosio (lat. 77° 18′, long. 18° 25′). Here we found 3 tent-rings and about 6 temporary meat-stores.

The island is a barren waste. In winter, after a heavy snowfall, it appears only like a small hump of ice against the surrounding white.

On the southernmost part the Eskimo tent-rings were found on the highest portion of the island; two were found, according to Dr. LINDHARD's diary, on the highest part, one on each side of the Danmark Expedition's cairn, with about 12 meters space between them.

The most northerly (29) was circular, with an external diameter of 2·75 M. The southern one (30) (fig. 4) was somewhat oval with largest cross-section 4 M., least 3·50 M., the entrance 0·90 M. In both were found two parallel rows of stones (double platform-edge). In the southern ring these stones were small and flat, in the northern large, flat and standing on end, with ca. 0.50 M. between the rows. Remains of burnt blubber were found under the stones at several places.

In the neighbourhood were found about 6 temporary meat-stores (31).

On one of the southern points of the little island was found — according to FRITS JOHANSEN's notes — an oval tent-ring (32), 2 M. long and 1·50 M. broad. It lay just on the margin of the beach on the projecting, solid rock. There was no platform-edge. The opening for the door, which lay in the longitudinal axis, looked towards the south and from this a small "passage" with 3 small stones on each side led into the tent-ring.

District V. The neighbourhood of Kap Bismarck.

Thomas Thomsens Næs (lat. 77° 11′, long. 18° 14′). Here were found many tent-rings, 1 shelter, 1 trap, 2 permanent meat-depots and 2 temporary meat-stores, 3 fire-places, 3 sets of rests for kayaks and two other stone structures.

In the bay north of this Naze there is another, smaller point at a distance of 4—5 kilometers from it. Furthest out on this little naze there was a hunting shelter (33) with the opening towards the east. The north and south walls were 1·25 M. long, the west wall 0·65 M. long and the opening 0·45 M. broad. The shelter was built of a single row of small stones and the floorplace was constructed of uniform, solid, beach-materials — small pebbles and gravel.

Thomas Thomsens Næs is broad, low and stony. There are several recognizable shore-lines. The soil is of various composition, fine gravel above on the naze but much coarser material nearer the present beach-line. The low-lying fore-land of the coast is here broader than further to the south along Germania Land and the

indentations in the land north and south of the Naze are deep, so that this stands out somewhat prominently.

Dr. LINDHARD and BRØNLUND were the first to investigate this place ethnographically (in August 1906). The diary of the former contains the following regarding it:

"Here there are signs of a large Eskimo settlement[1]. Numerous, up to about 20 tent-rings, partly circular, partly oval and a few square; small fire-places outside the rings; charcoal was found at the bottom of the fire-places.

A couple of well-preserved stone structures with flat stones on the bottom, open at the one end (fox-traps?) and lastly at two places pillars of stones (supports for the women's boat?).

Some distance from this we found a square, broken down stone-heap resembling a grave, but there was no skeleton in it.

Skulls of walrus, teeth and antlers of reindeer were found at the settlement.

A quantity of bone implements was found."

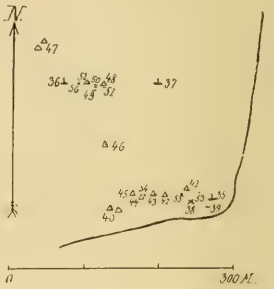


Fig. 15. Settlement on Thomas Thomsens Næs. (Sketch by the author).

Regarding the conditions on the Naze further north, Dr. LINDHARD writes further:

"Here we found numerous tent-rings[2], some damaged, some quite well preserved. One considerably larger than usual, almost heart-shaped, with very broad entrance, on the one side of the "indentation".

No loose implements were found."

In June 1908 I had myself the opportunity to visit the place in

Fig. 16. Kayak rests 35. Thomas Thomsens Næs. Seen from the west. (Drawing by the Greenlander TOBIAS).

order to examine it more closely — at the special instigation of Dr. LINDHARD, but the heavy snowfall of the previous winter had left the land so covered with snow even in June that investigation was difficult.

I found only 12 tent-rings, 1 trap, 2 permanent meat-depots, 2 temporary meat-stores, 3 fire-places, 3 sets of rests for kayaks and two other stone structures (fig. 15); but at several places I also saw stones projecting up through the snow, probably from tent-rings.

[1] (35—56). [2] (34).

The northern part of the Naze (34) was quite inapproachable owing to the snow.

Particulars of the rests for the kayaks are given in the following table.

No.	Main direction	Distance from north (west) to middle rest	Distance from middle to south (east) rest	North (west) rest		Middle rest			South (east) rest			Height of rests			Remarks
				Length E.—W. (N.—S.)	Breadth	Length	Breadth at ground	Breadth at top	Length	Breadth at ground	Breadth at top	North (west)	Middle	South (east)	
35	N.—S.	2·50	2·00	0·48	0·20	1·00	0·60	0·20	0·90	0·78	0·20	0·75	0·45	0·44	Figs. 16 and 17.
36	N.—S.	2·90	3·20	0·70	0·23	0·85	—	0·22	0·65	—	0·13	0·50	0·50	0·50	
37	W.—E.	2·30	1·90	0·65	0·30	0·70	—	0·30	0·17	—	0·14	0·40	0·40	0·40	

Some further details of these kayak-rests may be given:

35; figs. 16, 17: these lay close to the shore, which so far as I could see was steep and stony. The northern rest was in part the fixed rock, 2 smallish stones being laid on this and above them a third, larger. The middle rest was formed of a heap of several large stones and the southern rest was made of many stones, both large and small.

Fig. 17. Kayak rests 35. Thomas Thomsens Næs. Seen from the south. (Drawing by the Greenlander Tobias.)

36: these were far — over 200 meters — from the nearest beach. The northern rest was built of large and small stones. Uppermost lay 2 larger stones in touch with one another, so that the ends where they met in the middle lay lower than the outer ends. The middle rest was formed of 5—6 large stones, 2 of which almost equal in size lay uppermost. The fixed rock formed the southern rest, a stone being laid on a small, rocky hummock.

37: these were found almost halfway between the set last mentioned and the shore. The western rest consisted only of two stones, one large and the other somewhat smaller, which lay beside one another. The middle rest was formed of several stones.

The eastern rest was composed of one stone laid on the top of an other.

The trap (38) lay between a permanent and a temporary meat-store (55 and 53). It was 0·75 M. long, 0·18 M. broad and 0·23 M. high. The heavy sliding door was lying at the side and the hindmost covering stone had been removed. The door opening faced the south. The trap was quite well preserved.

A construction of small stones (39), in the form of a slight curve, was 2·45 M. long but only 0·75 M. deep in the bend.

Tent-rings, permanent and temporary meat-depots were found partly along the south coast of the Naze and partly somewhat higher up, almost on the ridge of the Naze (see fig. 15).

On the beach 2 tent-rings were found (40), but they had been so much disturbed that they could not be measured (musk-ox). Further, the following tent-rings were found here:

No.	Form	Length	Breadth	Platform-edge's		From platform-edge to		Breadth of door-opening	Door looking towards	Passage out from door-opening	Remarks
				Length	Direction	Back wall	Door-opening				
41	rectangular	3·00	1·90	—	—	—	—	0·35	E.	—	Ordinary stones. Door at southern corner of east wall.
42	four-sided	2·68 2·20	1·25	—	—	—	—	0·58	S.	0·50	Large closely placed stones. Door at eastern end of south wall.
43	four-sided	—	—	2·25	N.—S.	1·50	1·50	0·60	S.	0·65	Door in middle of south wall. N. and S. walls 1·80 M. long.
44	circular	—	—	1·75	E.—W.	1·00	0·75	0·75	W. S. W.	0·75	(Walrus).
45	oval	—	—	1·90	E.—W.	0·65	1·00	0·85	S.	—	(Polar bear).

In the middle of the west wall in the tent-ring 42 there was a semicircular niche directed outwards, with radius = 0·35 M. A stone was placed in the middle of the floorplace.

An oval tent-ring (46) was found higher up on the Naze, between the beach and the stone remains on the ridge. It was 2·20 M. broad along the edge of the platform, which lay in the direction east to west. From this to the back wall the distance was 1·30 M.; to the front wall 0·75 M. The door opening could not be distinguished.

Some bone remains were found scattered about on the ridge of the Naze (polar bear, walrus).

Two disturbed tent-rings (47) could not be measured.

The outermost of the tent-rings lying on the ridge (48) was oblong, almost oval, with nearly straight sides and rounded ends. Its long axis was directed east and west. The length was 2·40 M. and the greatest breadth 1·20 M. The platform had been carefully levelled and occupied the eastern half of the tent-ring. The floorplace in front of the platform was composed of coarse gravel and small stones. The door opening was 0·45 M. broad and looked towards the west. The stones in the tent-ring were of the ordinary size and were packed very close together, so that a low wall was formed, 0·20—0·25 M. high. Outside this close stone-work there was an ordinary tent-ring with stones further apart. The distance between this external and the close, inner ring was 0·25 M. along the south wall and 0·40 M. along the north wall. Outside the door opening of the compact ring the outer ring took the form of an oval, 1 M. long by 0·50 M. broad (east —west).

Probably the compact stone-ring stood inside the skin of the tent[1], so that it gives us quite exactly the dimensions of the groundplan of the tent. The outer ring was then the stones for weighting down the skin of the tent and the oval expansion at the door opening shows, that the tent has had an "appendix" or a passage.

Quite close to the door opening of this tent in S. W. direction there was a well-constructed fire-place (49) with the opening towards S. W. It was 0·46 M. long, 0·30 M. broad and 0·20 M. high. Charcoal was seen here. In the neighbourhood there were 2 disturbed fireplaces (50).

Close to the tent-ring in the S. E. direction there were 2 large stones, one on the top of the other (51); meat was probably placed on them.

A square-shaped tent-ring (52) was 2·50 M. along the side. No door opening was seen (polar bear).

A circular, temporary meat-store (53) was formed of large stones, 0·50 M. in diameter and 0·30 M. high. A second, smaller store (54) was found E. N. E. of and close to the tent-ring 44. It was 0·30 M. in diameter and 0·25 M. high. Bones were found in both (walrus).

The following data refer to the permanent meat-depots:

[1] Cf. Scoresby 1: p. 185; Graah: p. 73, Pl. VI; Holm 2: p. 71 and Amdrup 2: p. 327.

No.	Form	Length	Breadth	Height	Remarks
55	oval	1·00	0·50	0·50	Well built (walrus (lower jaw)).
56	circular	1·00	1·00	0·60	Well built. On the ridge of the Naze.

Kap Steensby (lat. 76° 55′, long. 18° 15′). Here 8 tent-rings and 2—3 temporary meat-stores were found.

The tenting ground was found close to the south of Kap Steensby, which is the only promontory on the east coast of Germania Land. The cliffs jut out from the heights behind the low fore-land, which is here not broad, but narrow, flat and gravelly with some stones. The screw-ice goes close into the Cape and the currents often make openings in the ice off here especially in spring. Both in April 1907 and in March 1908 there were openings here of wide extent, whilst the greater part of the sea at other places along the coast was still filled with impassable screw-ice.

On a broader, but little prominent point there were 7 tent-rings about 3 meters above the sea, quite near to the beach, with good shelter from northerly winds. A couple of temporary meat-stores were also found here (57).

The 6 tent-rings (58) lay together, the seventh (59) about 30 meters more to the south. They were all of oval form, the most southern 3·20 M. long and 2·40 M. broad. Of the other 6 rings, the smallest was 2·80 M. long and 2·40 M. broad, the largest 3·20 M. long and 2·80 M. broad. Broken, cast antlers of reindeer were found round about. (According to information from JOHANSEN).

In June 1908 all these tent-rings were covered with snow and I only found one oval ring (60), which was 1·90 M. long in east to west direction and 2·30 M. broad along the platform-edge from north to south. From the back wall to the platform-edge the distance was 0·85 M. The door opening was 0·48 M. broad and looked towards the east. The floor-place was composed of sharp pointed beach-stones and the platform was not specially level. Many tracks of bear led along the coast and there was much open water off the tent-ring.

Hunting ground north of Syttenkilometernæsset (lat. 76° 51′, long. 18° 20′). A tent-ring, a couple of traps and 11 large, permanent meat-depots were found on the shore about 4 kilometers north of Syttenkilometernæsset. The shore was fairly steep here, with extensive stretches of gravel and pebbles.

The trap furthest to the north (61) was 0·63 M. long, 0·19 M. broad and 0·22 M. high. The trap door had been removed to the side. Small stones had been chiefly used in the construction of the trap.

The trap to the south (62) was 0·70 M. long, 0·15 M. broad and 0·17 M. high. The heavy door had been removed to the side and the hindmost covering stone was away. The locking stones as well as the other stones in the structure of the trap were very heavy.

The traps lay ca. 30 meters from the beach, 10 meters above the sea and were built on small pebbles. In consequence of this the ground inside was paved with flat stones, so that the animal could not dig its way out. They stood N. N. W.—S. S. E. from one another at a distance of 40 meters.

On a small, level patch about 8 meters east of the last-mentioned trap there was an elegant little tent-ring (63). It was oval with a door opening 0·45 M. broad which looked towards the S. S. E. From this to the edge of the platform the distance was 0·75 M., from the latter to the back wall 0·90 M. and the breadth along the edge of the platform was 1·35 M. In the north-eastern part of the wall the stones of the tent-ring were placed close together and in a double row. (This ring might possibly be regarded as a "shelter".)

Nearer to the shore, only 5 meters from this, were 3 large permanent meat-depots (64), 1·25 M. in diameter. From these and southwards along the shore 8 other, large, permanent meat-depots (65) lay over a distance of about 50 meters. In the depots of the northern group we found narwhal bones, the others were empty.

The place is difficult of approach and it is little probable, that the natives of the nearest settlement, Syttenkilometernæsset, have had their meat depots and traps so far away. I obtained the impression that there had been a large narwhal fishery at this place at one time, and the natives have been obliged to store their booty temporarily and keep watch over it (in tent or shelter 63), until they could get the large, permanent meat-depots built. The meat had obviously lasted for a long time and the natives have then built the traps which could be attended to when they came to the place to fetch the meat.

Syttenkilometernæsset (lat. 76° 49′, long. 18° 21′). Here we found a large settlement with 16 winter-houses, 15 tent-rings, 8 permanent meat-depots, ca. 10 temporary meat-stores, 3 fire-places, 3 sets of kayak rests and 5 other stone remains (see fig. 18).

The south-going polar stream carries enormous ice-masses close past the Naze, and wide stretches of open channels are often caused by special conditions of the currents. Strong westerly storms drive the ice-masses at times as far to the eastward as one can see from the Naze. In still weather the ice returns in to the coast. There is nearly always movement among the ice off this Naze. In consequence of the very open water Syttenkilometernæsset is one of the places on the coast which the bears frequent in their wanderings and the bear-hunting must have been good. The fairway, even for large vessels, goes close in to the land. The shore to the east is densely encumbered by screw-ice, but it would be possible to land with the

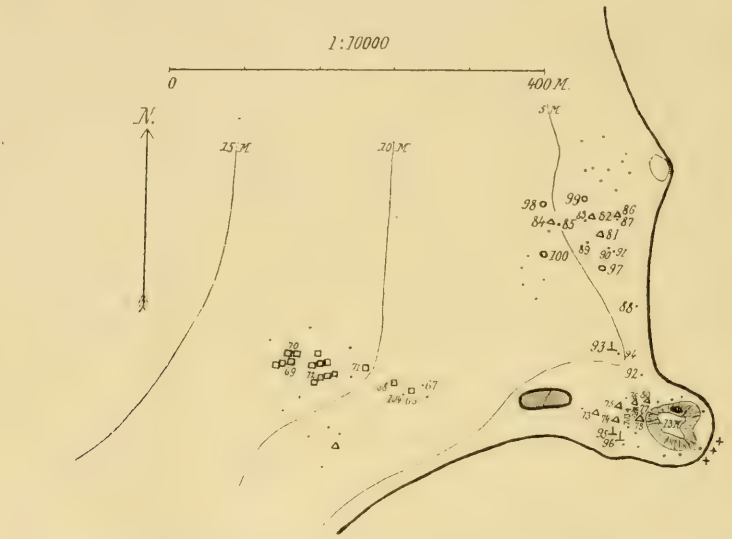


Fig. 18. Settlement on Syttenkilometernæsset.
(Chart prepared by GUSTAV THOSTRUP and the author).

kayak or drive the sledge up at the south shore. The depth of water in the large bay south of the Naze is certainly small, as we have never seen very large ice-clumps driven in there. When frozen over, this bay with its even ice has afforded excellent sledging for the Eskimos. We found almost no drift-wood. When we consider the time which has passed since human beings have lived up there, the transport of drift-wood seems thus to have been extremely small, even if we allow that the ice must have taken much away again, when no one was there to bring it into safety up on the beach. Furthest out on the Naze a rocky knoll 13 meters high gives an excellent view and large hollows on the north side of the cliff serve in the summer time as good reservoirs for the water from the snow. Further, there is a small pond, now dried up, near

to the west of the cliff. The shore to the south is steeper than the eastern, but like this level. In winter the snow makes it impossible to distinguish where the south beach and the sea ice meet. — From the sea the ground rises quite evenly over a distance of about 7—800 meters to a height of ca. 30 meters, then a steep slope leads up to a wide plain with patches of barren and fertile land intermingled. At several places on the plain we found many cast reindeer antlers. Side valleys and passes lead to the musk-ox grounds at Sælsøen.

It has been chiefly the coast between the rocky knoll and the dried up pond and further north, which was used as tenting ground[1], for which purpose its evenness (see fig. 9) has made it specially suitable. Here we found many bones (bean-goose, grey gull, (feathers), dog, polar bear, walrus, bearded seal, fjord seal, reindeer (among which, naturally cast antlers), musk-ox, whalebone and ribs of the whalebone whale, narwhal). Some low gravelly ridges rise in undulations along the coast, parallel to this, and on one of these we found the one set of kayak rests (93, fig. 21). The winter-houses lie nearest to the south shore (see also the chart fig. 18). The place seems to have been occupied the whole year round.

The 16 winter-houses lay close together, with their entrances pointing towards the south or south-east. They were very old and much sunken in the ground and thus very difficult to measure with satisfactory accuracy. None of these houses were dug out. — In spite of repeated search I did not succeed in finding graves in the neighbourhood.

Details of the winter-houses measured are given in the following table (see Pl. II).

No.	Length from front to back wall	Breadth	Passage		Bones found outside the houses
			Length	Direction	
66	3·25	3·00	1·00	S.	
68	2·75	2·75	—	S. E.	Polar bear, lingual bone of whale-
69	3·15	3·15	—	—	bone whale.
70	2·50	2·30	0·80	S.	
71	1·80	1·80	0·60	S.	Reindeer (cast antlers), musk ox.

[1] Cf. Duc d'Orléans 1: pp. 255—256, illustrations p. 255, and Duc d'Orléans 2: p. 16. It may be remarked however, that the "Trois tombes" mentioned are included among the stone remains described by me (97—100), which can be seen from the illustration Plan V (here: fig. 22) in the above-named work.

The other 11 winter-houses (72) were estimated to be 2·50 by 3·00 M.

The following table gives details regarding the tent-rings.

No.	Form	Diameter	Length of platform edge	Direction of platform edge	Distance from edge of platform to back wall	Distance from edge of platform to door opening	Breadth of door opening	Direction of do.	Passage out from tent-ring	Bones found
73	circular	—	3·55	N. E.—S. W.	2·40	1·10	0·75	S. E.	—	Fjord seal.
74	circular	—	3·10	E.—W.	1·85	1·50	0·60	S.	—	
75	oval	—	3·15	E.—W.	2·10	1·25	—	S?	—	Feathers, walrus, fjord seal; (fig. 3).
76	circular	3·00	—	—	—	—	0·75	S.S.E.	—	Dog, walrus, bearded seal, fjord seal, musk-ox; (fig. 19).
78	circular	3·00	—	—	—	—	0·75	S. S. E.	0·40	Feathers, fjord seal, pieces of whalebone.
80	circular	—	3·00	N.—S.	1·50	1·50	0·50	S.	—	Feathers, bearded seal, fjord seal, reindeer (cast antlers).
81	oval	—	2·80	N.—S.	1·40	0·95	—	—	—	Fjord seal.
82	circular	—	3·00	N. –S.	1·80	1·25	—	—	—	Feathers, grey gull, smaller gull, reindeer (cast antlers); (fig. 20).
84	circular	3·00	—	—	—	—	—	—	—	Bearded seal, fjord seal.

Further notes regarding these rings may be given.

74: there was a stone in the middle of the door opening.

75 (fig. 3): the door was indistinct. The platform had obviously been levelled and the whole floorplace lay somewhat lower than the tent-ring stones.

76 (fig. 19): in the back part of the tent-ring there was a collection of 6 flat stones, forming a small circle. From the centre of this the distance to the back wall was 1·25 M. and to the front wall 1·75 M. To the south of the ring and close to it there was a fireplace 0·35 M. long (77) with the opening to the north.

78: a row of stones closed the outer end of the passage. North of the ring lay a permanent meat-depot (79); (feathers, fjord seal).

80: the edge of the platform led from the door to the opposite wall.

81: the door opening could not be distinguished. The floorplace in the eastern part of the ring had been levelled and has probably been the platform.

82 (fig. 20): broken up.

84: the door opening was not distinct. In the middle of the ring lay a large flat stone. Close to the ring in an easterly direction lay

Fig. 19. Tent-ring 76. Syttenkilometernæsset. (Drawing by the Greenlander Tobias).

Fig. 20. Tenting ground on Syttenkilometernæsset.
Seen from the north. In the foreground the broken up tent-ring 82 and to the right of this the permanent meat-depot 83. In the middle ground, a little to the left of the centre of the picture, the permanent meat-depot 89. In the background to the left the tent of the Expedition under the rocky knoll on the extreme point of the Naze; almost in the middle of the picture the kayak rests 93. (Photo. by the author).

2 large, oblong, flat flagstones (85) placed obliquely against one another, so that they formed a roof; the one end was closed by a flat stone. The room within was 1·20 M. long by 0·50 M. broad; the height was 0·70 M. The 2 sloping stones were sunk a little into the ground.

Some tent-rings were possibly not investigated.

To the tent-rings should perhaps be reckoned a compact, oval stone elevation 0·32 M. high without opening (86). It was 2·80 M. long in the direction east—west and 2·35 M. broad, and it was found near the rings 81 and 82.

The following table gives information regarding the permanent meat-depots.

No.	Form	Length	Breadth	Height	Remarks
67	rectangular	0·77	0·53	0·45	Well built; uncovered. (Fjord seal).
83	circular	0·60	0·60	0·35	(Fig. 20).
87	square	0·60	0·60	0·45	
88	rectangular	0·70	0·60	0·42	Well built; uncovered.
89	rectangular	0·75	0·67	0·53	Unusually well built on the east side of a solid, vertical rock, 0·65 M. high. (Fig. 20).
90	circular	0·60	0·60	0·30	Somewhat destroyed.
91	rectangular	0·80	0·60	0·50	

A temporary meat-store (104) was found close to the west of the house-passage of winter-house 66. It was circular, 1·75 M. in external diameter.

A second of the same form (94) and 1·80 M. in diameter was found close S. E. of the kayak rests 93.

A third temporary meat-store (92; fig. 9) lay 2 to 3 M. above the sea. It was also circular and its dimensions were: internal diameter 0·68 M., height 0·30 M., external diameter 1·18 M. and height 0·54 M.

The dimensions of the kayak rests were as follows:

No.	Main direction	Distance from north (N. W.) rest to middle rest	Distance from middle rest to south (S. E.) rest	North (N. W.) rest			Middle rest			South (S. E.) rest			Remarks
				Length E.—W. (S. W.—N. E.)	Breadth	Height	Length	Breadth	Height	Length	Breadth	Height	
93	N.—S.	3·50	3·25	0·48	0·32	0·46	0·68	0·32	0·46	0·61	—	0·46	(Figs. 20,
95	N. W.—S. E.	3·20	3·20	0·45	—	0·35	0·65	—	0·35	0·45	—	0·30	21).
96	N. – S.	3·40	—	—	—	—	—	—	—	0·60	—	0·35	

The following notes may be added.

93 (figs. 20, 21): the rests were found on the top of a small gravelly ridge 1·50 M. high, 5 to 6 meters above the sea and were of very fine construction.

95: was found 4 meters S. W. of the tent-ring 74.

96: the northernmost rest was partly broken down. The southern stood at the side of the middle one of 95. No third rest was seen.

Between the tent-rings 76 and 78 was found a well-preserved

Fig. 21. Kayak rests 93. Syttenkilometernæsset.
Seen from the west. The top of the Expedition's tent is seen between the north and middle rests. (Photo. by the author).

fire-place (101; fig. 10) with the opening towards the west. The southern wall was a firmly fixed stone, the others were well built to a height of 0·15 M. The fire-place was 0·28 M. long in the direction east to west and 0·23 M. broad. The opening was 0·13 M. broad. (Fjord seal).

Near this fire-place and fire-place 77 was found a third fire-place (102), built in an old, temporary meat-store (103).

Along the east shore were found 4 large stone structures, consisting of a round wall of stone with door opening, which might be closed by a stone. We imagined them at first to be the foundations of a lighter make of house, but the heavy door-stone was very

much against this view. Their structure recalled somewhat that of the hollow cairn on Kap Bismarck (123; fig. 26), but the upper edge of the much lower walls was of very equal height and I imagine that they were large permanent meat-depots intended for storing whale-flesh[1], especially as a lot of whalebone and ribs were found in the neighbourhood. When filled they have then been covered over with ice, snow or skins, as there were no covering stones. We found no special stone arrangements on the floorplace.

The first of these structures (97; fig. 22)[2] had been built with

Fig. 22. Permanent whale-flesh depot 97. Syttenkilometernæsset. Seen from the S. E. The stone for the door is in its place. (Photo. by the author).

special care. The stones lay evenly and more regularly than in the three other structures. The door opening, which looked towards the S. E., was 0·44 M. broad and 0·49 M. high and was closed by a flat stone. The height of the wall was ca. 0·95 M. and its thickness 0·40 to 0·50 M. The floorplace was circular, 1·75 M. in diameter. The stones in the wall were not adjusted close to one another. No fallen stones were found either in or near the ruins, to indicate that the wall had been higher; nor was any covering stone found. The wall arched slightly inwards. The height above the sea was 4 to 5 meters.

[1] Cf. PARRY: pp. 362—363, illustrations p. 362. [2] Cf. DUC D'ORLÉANS 1: illustr. p. 255 and DUC D'ORLÉANS 2: Plan V.

The next structure (98; fig. 23) lay about 4 to 5 meters above the sea. The door opening was 0·74 M. broad and 0·40 M. high, looked towards the east and was not closed with any stone. The height of the wall standing was ca. 0·80 M. and its thickness up to 0·36 M. The floorplace was almost circular, 4·20 M. in north to south and 3·96 M. in east to west direction.

The third structure (99; fig. 24) lay about 3 to 4 meters above the sea. Of this one wall was quite wanting, so that only a semi-circular wall remained. The north wall was formed by a solid

Fig. 23. Permanent whale-flesh depot 98. Syttenkilometernæsset. Seen from the east. (Photo. by the author).

rock 1·00 M. high. The door opening, which looked towards the S. E., was 1·02 M. broad and 0·76 M. high. It was closed with a flat stone. The height of the wall still standing was very unequal, its thickness at the door was ca. 0·40 M. The floorplace has probably been circular, with a diameter of 3 M. The stones wanting in this structure were not found in the neighbourhood and might well have been removed to be used elsewhere.

The last of these four structures (100) was half destroyed. A door opening 0·50 M. broad looked towards the east and was closed by a very heavy stone-slab. The latter was so heavy that two men could scarcely lift it. The height of the wall still standing near the door was ca. 0·70 M. and its thickness ca. 0·25 M. The floorplace

was oval, 2·25 M. in east to west and 1·50 M. in north to south direction. The wall was arched a little inwards, so that the cross-section above was less than the diameter of the floorplace.

North of the winter-houses we found a tent-ring (105) about half a kilometer from the shore. It lay on pebbly ground, was oval, 2·40 M. long in north to south direction and 1·90 M. broad along the edge of the platform, which divided the floorplace into two equally large parts. The door opening looked towards the south and was 0·60 M. broad.

Fig. 24. Permanent whale-flesh depot 99. Syttenkilometernæsset.
Seen from the E. N. E. Shows the door, the door-stone, the wall still standing and the rock which had formed the north wall. In the background to the right depot 98. (Photo. by the author).

About 100 meters nearer the beach we found an old shore-line, within which there lay 4 tent-rings (106) and about 6 temporary meat-stores (107). Both the rings and the meat-stores were in ruins and of an older appearance.

For the various structures on Syttenkilometernæsset flat stones have in the main been used.

Between Syttenkilometernæsset and Oksebladet. At several places along this stretch we found old tent-rings (108) and temporary meat-stores (109), especially on the small, rocky islets. On one of these, inside the bay, we also found a trap (110). The signs

of occupation here were however very scattered and it has probably been of a more occasional nature.

N. W. of Øksebladet (lat. 76° 46′, long. 18° 28′). On the north side of the pass-way between the sea-ice and the fjord-ice we found 3, apparently very old tent-rings (111). They lay about 100 meters from the shore on ordinary beach gravel. They were circular, ca. 2·50 M. in diameter. The door opening could not be distinguished. We found no platform, but almost in the middle of the rings there was a small heap of stones.

The stretch of coast about 1·5 kilometers long from Øksebladet towards the S. W. was not investigated.

Ørnens Ø (lat. 76° 44′ long. 18° 30′). On the highest part of the island we found a trap (112) at a height of ca. 25 meters above the sea. It was constructed of small stones on the east side of a heap of stones and was not very apparent to the eye. It was only 0·61 M. long, 0·16 M. broad and 0·19 M. high. The falling door was away. The door opening looked towards the S. E.

Kap Udkiggen (lat. 76° 43′, long. 18° 29′). Here we found 3—4 tent-rings and 3—4 temporary meat-stores.

This Cape is the most south-easterly point on Ørnens Ø and consists of a rocky knoll, which is connected with the island by means of an isthmus covered at highwater. Kap Udkiggen lies close out to the sea-ice.

On the south-west side of the Cape we found old tent-rings (113) and temporary meat-stores (114). Underjaws of a few walrus and bones of seals were found at the spot.

Kap Bismarck (lat. 76° 42′, long. 18° 35′). Here we found ca. 10 tent-rings, permanent and temporary meat-stores, 1 fire-place, 1 hollow cairn and 3 other stone remains.

On the low shore facing the south, stone remains (115—116) were seen, and not a few bones were found along the easily approachable beach (polar bear, fjord seal, reindeer). The flat fore-land was covered by sharp pointed stones and had a freshwater pool on the eastern side. On the higher ground lying behind the shore several permanent meat-depots (117) were found, as also a couple of primitive stone ruins of special form.

About 10 tent-rings (115) were seen, 2 to 3 meters in cross-section. The stones used in these were in part flat, in part large and pointed. In one we found a recognizable, white piece of quartz

(cf. p. 197). The permanent and temporary meat-stores 116 were large and well-built. Some of the permanent depots were built up along a small cliff to the east of the shore.

One of the higher-lying permanent meat-depots (117) was measured (118; fig. 8). It was 0·55 M. by 0·45 M. and 0·55 M. deep. The solid rock had been used in its formation and it had the appearance almost of a square hole. The meat-depot was open and the covering stone removed (rolled down).

Along the east side of a natural wall in the cliff we found a

Fig. 25. Store or dwelling 119. Kap Bismarck.
Seen from the E. S. E. The natural wall in the cliff is seen; further the ground stone, the two stone pillars still standing and the fallen pillars. On the higher ground the hollow cairn 123. (Photo. by the author).

stone structure (119, fig. 25), which may perhaps have been a store room or dwelling. Almost parallel to the wall there lay a longish stone 0·45 M. high at some distance from the rock. From this stone there were stone-pillars reaching obliquely over towards the vertical wall of the cliff. Two of these pillars were still standing, whilst others were lying down. The pillars alone have not been sufficient to shelter the room, so that they must only be regarded as the skeleton for a lean-toroof. Skins have possibly been used as final covering. If there has been any door opening, it has been directed towards the south. The floorplace was 1·90 M. long in north — south and 0·95 M. broad in east to west direction at the broadest

place. The height of the space along the wall by the cliff was 1 meter.

North of the ruin 119 we found ruins of 2 buildings (120 and 121; Pl. III) with one wall in common. They lay on the east side of a natural wall 0·60 M. high, the vertical side of which formed the lowermost part of the west wall of the structure. The mode of construction was solid. The many stones lying about show that the walls has been higher. The part still standing of the common wall was ca. 0·60 M. high and 0·50 M. broad at its greatest length.

Fig. 26. Hollow cairn 123. Kap Bismarck.
Seen from the north. (Photo by Koch).

The remaining walls were only up to a height of ca. 0·25 M. Between the door openings the common wall was very broad. The southern room (120) was 2 meters square, with rounded corners. The northern room (121) was square, 2 M. in east to west and 1·25 M. in north to south direction, with rectangular corners. Both the rooms had the door opening towards the east, 0·50 M. broad, and forming a short passage. It seems most reasonable to suppose that these two ruins were the remains of winter-houses[1].

Along the same natural wall and close to the north of these

[1] Cf. Garde 1: pp. 125—126.

2 ruins there was a small, well-built fire-place (122; Pl. III), which was distinct from the other fire-places we had seen by being closed to all sides. It was 0·43 M. long in north to south direction, 0·30 M. broad and 0·30 M. high. In this we found charcoal and a piece of wood.

The most remarkable structure on Kap Bismarck seemed to me, however, to be that figured in fig. 26.

This structure (123) was for a long time considered to be an old cairn by the members of the Expedition and our Greenland comrades talked of it as an "Eskimo stone", to contrast it with the cairns built by the Expedition, which they called "KOCH stones"[1]. In appearance the structure was quite like a cairn.

On a sledge-journey I investigated the structure more closely and found that it was hollow and built in a most practical manner. It was slightly arched, almost bee-hive shaped and had an opening above. At the base, towards the S. S. W., it was possible to remove some stones without disturbing the rest, and a doorway then appeared 0·40 M. broad and 0·50 M. high. In spite of the fact, that the whole structure only consisted of a thin shell of stone, it was yet so strong, that I was able, though weighing ca. 90 kg, to climb up on the top and let myself down through the opening without a single stone being moved from its position. Sitting inside the structure the stones were sufficiently wide apart to let me have an excellent view of the country through the spaces between the stones. The floorplace was circular, 1·70 M. in diameter; the diameter of the opening at the top was 0·90 M. The height was 1·15 M. internally and 1·25 M. outside; the thickness of the wall 0·15—0·20 M. The circumference of the hollow cairn externally was 7·85 M. at the base and 3·75 M. above.

Regarding the use made by the Eskimos of this hollow cairn we knew nothing on the Expedition and opinions were many and divided. One of my comrades, Mr. HAGERUP, had however already remarked while we were in Greenland upon its resemblance to the old wooden and stone fox-traps used by the Russians on Spitsbergen and he was quite right. It is really a fox-trap. For this purpose the one end of a whalebone with a piece of blubber on it was fixed above, so that the bait would be in the middle of the opening. When the fox stepped out on the piece of whalebone, this seesawed under his weight and the fox fell into the trap, from which it could not climb up again. In such a trap several foxes could be taken in one night[2].

In the old tale about Imerasugsuk[3] it is said, that Misana

[1] Captain KOCH was the cartographer of the Expedition. [2] Cf. PARRY: p. 387; LYON: pp. 339—40. [3] Cf. HOLM 3: p. 247.

managed to fall down through the opening in her brother's fox- and raven-trap, so that she killed all the foxes and ravens. Probably the fox- and raven-trap has been of the same kind as this hollow cairn, as it is certain that neither a fox nor a raven could get out of it again.

Similar hollow cairns or structures of the same form have been found before[1].

Renskæret (lat. 76° 41′, long. 18° 34′). Here we found 6 winter-houses, tent-rings, shelters, permanent and temporary meat-stores, fire-places and 3 sets of rests for women's boats.

The islet is low, only 16 meters high; it lies in the fairway between Lille Koldewey and Kap Bismarck. A second, smaller islet, Maatten, which lies between Renskæret and Kap Bismarck, was unfortunately not investigated, owing to lack of opportunity, but stone remains are perhaps also to be found on it.

In good summers there is much open water round about Renskæret. In bad summers there is open water inside it. The islet has innumerable, sharp, large and small stones and there are not many places where small gravel or pebbles occur. At the present time the islet is the breeding-ground for quantities of terns and other sea-birds.

The north, east and west shores only have a few, large permanent and temporary meat-stores (124). Further, some shelters (125) occur here.

The south end, on the other hand, is practically "sown" with stone remains. Many large permanent meat-depots (126), several temporary meat-stores (127), large and smaller shelters (128), well built and up to 1 M. in height, and several tent-rings (129; fig. 27) were found. Bones of marine animals and cast antlers of reindeer lay scattered everywhere. (Bearded seal, fjord seal, reindeer (antlers), Greenland whale).

Of the winter-houses 5 lay to some extent together, in a row directed N. W. to S. E., the sixth lay a little isolated, S. W. of the westernmost of the other 5 houses. The isolated winter-house is numbered 130, the others from west to east 131 to 135.

In July 1908 all the winter-houses were still so completely frozen, that the ice made investigation difficult, but we nevertheless

[1] Cf. Scoresby 1: pp. 186 and 203 (see 186); Scoresby 2: pp. 354 and 356 (see 354); Scoresby 3: pp. 216—217; Lyon: p. 46; Sherard Osborn: pp. 142—144, illustration p. 143; Belcher: I, pp. 279—280, illustration p. 280; Ohlin: pp. 75—76, Chart p. 72; Nathorst: pp. 229 and 334; Sverdrup 1: p. 70; Sverdrup 2: p. 68; Amdrup 2: pp. 316—318.

succeeded in finding various articles in them. The size was almost the same, except in the case of the easternmost (135) which was only half so large as the others.

In winter-house 135 no bones were found; in and near all the others polar bear; further, in 130, 131, 132 narwhal, 130, 133, 134 fjord seal, also walrus in 130; in 131 musk-ox (skull with horn sheath); in 133 bearded seal and reindeer and in 134 hare.

The winter-house 134 (fig. 28 and Pl. II) was the best preserved and was measured to some extent. The roof was in ruins; as roof

Fig. 27. Tent-ring 129. Renskæret.
Seen from the south. It is clearly seen that the floorplace has been levelled. To the left of the middle of the ring the place for the lamp; there was no platform; the doorway to the left is not seen. (Photo. by the author).

materials had been used large and small, flat stones. The ground had not been very much dug out, but the walls were built up above the ground of flatter stones. The platform was made of gravel and there were side-platforms at each side. The back wall was 2·80 M. broad, the side walls 2·20 M. long and the front wall 3·38 M. broad. The passage was 0·58 M. broad and ca. 2·50 M. long. It led out from the front wall 1 M. from the eastern side wall, and looked straight towards the south. In the house we found among other things 2 harpoon heads with bone points.

The entrance to the winter-house 135 also led due south, whereas in some of the others there was a bend in the passage.

The houses 132 and 133 lay side by side at a distance of about 1 meter. The passages led out obliquely from the abutting corners of the front walls and met a little way out, continuing afterwards as one passage. These 2 houses thus form a kind of transition to the common house[1] (Pl. II.). The houses were not measured.

The various articles found in the winter-houses lay under the roofing stones and on the platforms. More rarely some were found on the floorplace inside the doorway. In the houses we found among other things: in 131, a fine little slate-point and a small wooden

Fig. 28. Winter-house 134. Renskæret.
Seen from the S.W. The women's boat rests 137 are seen on the margin of the picture, behind and to the left. (Photo. by the author).

figure; in 132, a bow, foreshaft of a harpoon, a weapon point of slate and a couple of wooden figures; in 133, a fine, small, woman's knife, a comb of bone and an ice-scraper for kayak and in 134, 2 harpoon heads. As already mentioned, the winter-houses were far from being sufficiently examined and the no small number of articles we found with a hasty investigation seem to promise more; but I do not believe that the natives can have died out in the winter-houses, as no lamps were found anywhere, though we immediately searched the place on the side-platform where they had stood.

[1] Cf. Knud Rasmussen 1: p. 242 and Knud Rasmussen 3: p. 216.

Rests for women's boats:

No.	Main direction	Distance fr. north to middle rest	Distance fr. middle to south rest	North rest			Middle rest			South rest			Remarks
				Length in E.—W.	Breadth	Height	Length	Breadth	Height	Length	Breadth	Height	
136	N.—S.	3·50	3·25	0·38	0·30	0·78	1·25	0·30	0·63	0·40	0·50	—	(Fig. 29)
137	N.—S.	4·25	3·65	0·50	—	0·40	1·10	—	0·20	0·20	—	0·10	(Fig. 28)
138	—	3·55	3·55	0·35	—	0·65	1·25	—	—	0·50	—	—	

The following notes regarding these rests may be added:

136 (fig. 29): This set of rests was the finest, best built and best preserved we have found. The northern rest was formed of 5—6 square-shaped stones which lay above one another. The middle rest was constructed of many stones and looked like a part of a heavy stone-wall; it was 1·60 M. long (in E. to W.) below. The south rest was made like the northern, but the uppermost stone had fallen.

137 (fig. 28): This set lay north of the winter-houses. The northern rest consisted of a single stone standing up on end.

138: This also lay north of the winter-houses. The middle rest as well as one of the end rests was partially broken down. The longitudinal direction of these rests was most probably east to west.

Fire-places (139) were seen at several places.

The whole of Renskæret may be said to require a much more thorough examination than we were able to give it. The islet Maatten should also be investigated.

Maroussia (lat. 76° 40', long. 18° 33'). (Fig. 29). Here we found 5 winter-houses, 4 tent-rings, permanent and temporary meat-stores and 1 refuse place.

Maroussia is a small islet, 26 meters high, which lies ca. 2 kilometers south of Renskæret. The east, north and south sides are almost steep, but the west side is to some extent accessible. Although the islet is only between 100 and 200 meters in cross-section, it nevertheless contains a number of hollows, rocky slopes and isolated rocks. At several places there are patches of mouldy ground and here lay the winter-houses scattered about at various heights above the sea. In all 5 were found (140—144), namely, 2 on the west side (140—141), 1 in the middle of the islet (142) and 2 on the east side (143—144).

In some of the winter-houses the passage was bent at an angle, but straight passages were also found. There was no opportunity for close investigation unfortunately, but we succeeded in finding various articles on removing the fallen roof-stones in the winter-houses.

The winter-house 140 (Pl. II) was of very irregular form, with a bend in the passage, but this was due to the rocky ground at the spot. The back wall was 2·80 M. broad, the length from this to the front wall ca. 3·50 M. The passage was 0·60 M. broad and

Fig. 29. Women's boat rests 136. Renskæret.
Seen from the N. N. E. The north rest is to the right, the middle in the centre of the picture; the south rest, somewhat broken down, is to the left of the gray stone in the middle rest. In the middle ground to the left the island Maroussia. (Photo. by the author).

led first from the front wall 1·25 M. to the N. W. and then 1·25 M. towards the north. In the house we found a slate knife.

The winter-house 141 (Pl. II) lay about 20 meters south of 140 (feathers, dog (very old animal), walrus, seals, reindeer (antlers)). The back wall was 2·30 M. broad, the side walls 2·90 M. long (north to south). The east sidewall began with a small recess and ended at passage with a couple of projecting irregularities, but on the other side of the passage between this and the west sidewall the front wall was 1·10 M. broad. The passage was 0·63 M. broad and led first about 1 M. to the south and then quite 2 M. towards the S. E. The house has had small, flat roof-stones. The platform

consisted of gravel mixed with earth and was covered by flat stones.

In the winter-house 142 were found eggs-shells of terns (0·38 M. under the ground), walrus, fjord seal and in winter-house 144 polar bear.

In the winter-house 144 we found among other things 2 slate knives, one of which was very large.

On the islet were also found 4 tent-rings (145) and many temporary and permanent meat-stores (146), which were placed in a fissure-like depression. The permanent meat-depots were large and well built.

This depression may be regarded as a refuse place (147), for whereas the surroundings were barren and stony, this was covered with a copious layer of moss, and in and under this we found pieces of kitchen utensils and broken implements, as well as bones (dog, fjord seal).

Maroussia may be said to require more examination.

Kap Christian (lat. 76° 37′, long. 18° 38′). Here we found 2 traps.

This cape is the south-eastern end of Lille Koldewey and is connected with the remainder of this island by a low-lying part, which to the south continues out in Sonja Havn.

On the north-west side of the rocky cliff at Kap Christian the traps lay about 10 meters above the sea and ca. 75 meters from the shore; they lay east — west from one another at a distance of ca. 100 meters.

The one trap (148) was built of fairly small stones and was placed on what appeared to be a not very favourable spot. It was much broken down and the falling door as well as most of the covering stones had been removed. The remains of the trap still standing had the dimensions: 0·44 M. long, 0·14 M. broad and 0·19 M. high; it looked as if it had not been longer.

The second trap (149) lay on a rocky knoll (quartz stratum) and was solidly built of large stones; it was 0·87 M. long, 0·14 M. broad and 0·18 M. high. The covering stones had been in part removed and the falling door, which was of gneiss, 0·34 M. long, 0·20 M. high and 1·5 cm thick, was moved to the side.

The traps had the openings towards the land (S. E.).

Sonja Havn (lat. 76° 37′, long. 18° 39′). Here we found one trap and some other stone remains.

Sonja Havn is a natural harbour, which in a W. N. W. direction

cuts into the south-east end of Lille Koldewey, due south of Kap Christian. The harbour is deep and safe.

On its northern beach lie the first stone remains the Danmark Expedition met with, but unfortunately they were not investigated and when I visited the place in May 1908 for this purpose, they were covered over with snow half a meter deep.

We found nearly half a score of stone circles (150), about 2 to 3 meters in cross-section and about 0·30 to 0·40 M. high. They were constructed of ordinary, somewhat flat stones and they were almost circular, with a small passage directed towards the harbour. To the left of the passage in a few of the structures we found a small, square annex with the opening in towards the interior of the circle. I feel quite sure that these were remains of dwelling houses and not meat-stores, and it is very regrettable that there was no opportunity to examine them more closely.

Behind these ruins, about 12 meters above the sea, on the land to the north, we found a couple of stone structures (151) which resembled graves, but on my last visit they were frozen so solidly that I could only uncover them partially.

On the reef which bounds Sonja Havn to the south we found a fox-trap (152). It stood on the edge of the reef, in towards the harbour, about 3 meters above the sea. The trap was fairly well built of ordinary stones. The opening looked towards the S. E.; the falling door, which was in its place, was of granite, oval, and thicker and heavier than any other I have seen; at some places it was 0·03 to 0·04 M. thick; its length was 0·46 M., height 0·29 M. The pointed, wedge shaped stone in the back wall of the trap was also in its place; it was 0·13 M. long, 0·08 M. broad at the base and 0·04 to 0·05 M. thick, and it was so placed that the point reached 0·06 M. into the trap and was 0·08 M. above the ground. The inner space of the trap was 0·67 M. long, 0·18 M. broad and 0·12 M. high.

Rocky islet at Lille Koldewey (lat. 76° 39′, long. 18° 41′). Here we found 2 temporary meat-stores.

On the north-eastern side of the southern part of Lille Koldewey, near Olriks Pynt, about 3 kilometer from Kap Christian, there is a small rocky islet round which the tidal currents beat up the ice into the most extraordinary forms.

On the side of this islet towards the land lay the temporary meat-stores, a couple of meters from each other and about 5 meter above the sea. They were square in shape, oblong and lay close to the tidal screw-ice.

The one (153) nearest the beach was 1·10 M. long, 0·57 M. broad and ca. 0·40 M. high; the other (154) was 1 M. long and 0·54 M. broad; the height was difficult to measure as many loose stones lay in the bottom. The first one on the other hand was built on solid rock.

The place was rich in large, flat stones, which had also been used to the fullest extent in covering over the meat-stores. These were completely empty of bones and have perhaps only been of temporary use, for entire and unskinned seals — possibly a very occasional booty in this waste region.

Danmarks Havn (lat. 76° 46′, long. 18° 45′) **with immediate neighbourhood.** Here were found 49 tent-rings, 6 shelters, 15 traps, 12 permanent and 33 temporary meat-stores, 9 fire-places, 1 meat-depot made by children, 1 set of kayak rests, 2 cairns, 1 hare-barrier and 2 other stone remains.

Danmarks Havn is a natural harbour, lying 7 to 8 kilometers north of Kap Bismarck. The head of the harbour or north shore is low and 2 rivers have their outlets here; two small lakes (salmon was taken in one of them) also occur here and a bog. The latter towards the east changes over to somewhat higher lying ground, which is an outrunner from Termometerfjeldet, a hill north of the harbour about 135 meters high. Over the outrunner mentioned there is a pass-way for sledges, Overkørslen, from the north-east corner of the harbour, the height of the pass being 24 meters. Towards the west the harbour is bounded by the elongated Harefjeldet[1], ca. 180 meters high, north of which a pass, Vesterdalen, ca. 90 meters high, leads out to Stormbugt. On each side of the entrance to the harbour runs out a point, the Østre and Vestre Havnenæs. Østre Havnenæs lies on the same peninsula as Kap Bismarck. The peninsula which extends towards the south, is crowded with lakes and small cupola-shaped mounds or hills. Vestre Havnenæs is a low naze, which projects some distance into the harbour, east of Harefjeldet. A couple of kilometers north of the harbour there is the high plateau which extends out to Syttenkilometernæsset.

Immediately on the arrival of the Expedition at Danmarks Havn 3 tent-rings (155) as also a well-built meat-depot (156) were found on the beach just at the landing place; during the work of disembarking the Expedition, these were unfortunately disturbed before an exact investigation could be made. Bones of the following species were found at the harbour: hare, polar bear, bearded seal, fjord seal, reindeer (with cast antlers among them) and musk-ox.

[1] Called "Kap Bismarck" by KOLDEWEY (see: KOLDEWEY: I, p. 491).

At the head of the harbour to the west side near the two small lakes we found 3 tent-rings, 1 shelter, 7 temporary meat-stores and 1 fire-place.

About 40 meters due south of the smallest lake, on the western slope of a small, rocky knoll, we found a fire-place (157), open towards the west and only half closed towards the east. A sloping, flat, thin stone covered over the whole. The square space under this was 0·36 M. along the side, 0·20 M. high on the west and 0·08 M. high on the east side.

East of the fire-place at a distance of about 60 meters were two oval tent-rings, directly north—south of one another. The northern (158) was 3·40 M. in north—south, 3·75 M. in east—west direction. The second (159) was 4·30 M. in north—south, 3 M. in east—west direction. Feathers were found in 158. No door opening was seen in either of the tent-rings; the tent stones were small and flat; both floorplaces were paved with flat stones, closest in the ring 158.

A third tent-ring (160), a shelter (161) and 2 temporary meat-stores (162) lay 20 meters east of the two tent-rings mentioned.

Tent-ring 160 was constructed of ordinary stones, was circular, 3 M. in diameter and divided into two by the platform-edge, which lay in east to west direction. The door opening looked towards the S. E., was 0·75 M. broad and had a 1·25 M. long passage which led out from the ring. West of the door opening the tent-ring had a semicircular annex, 1·25 M. across.

Shelter 161 had the form of an acute angle and was built of small stones. The meat-stores 162, which were circular, were 1 M. in diameter.

On the top of a rocky ridge between the fire-place and tent-rings 158 and 159 were 5 large, round, temporary meat-stores, 4 of which (163) were 1 M. in diameter, the fifth (164) 1·50 M. in diameter.

On the eastern side of the harbour were found 5 traps and 2 cairns. The 4 traps were found near Overkørslen; 3 of them were well preserved, the fourth on the other hand partially broken down. The one (165) lay on the north side of the pass, the others on the south side. They lay almost in a straight line, so that to find them in winter the highest point on Termometerfjeldet has to be kept in line with an easily seen, black stone, which is always bare of snow, further down on the slope. This guiding mark was so obvious, that I as a seaman could not fail to notice it, but even those who were not seafarers soon found it out. Mylius-Erichsen very soon recognized the significance of the mark, when I showed him its

existence, and I found the traps 165 and 166 by following it, just as JOHANSEN found the traps 167 and 168 by the same method. There can scarcely be any doubt, that the Eskimos, in placing their traps, have also had this mark in mind.

The traps were measured by MYLIUS-ERICHSEN.

No.	Length	Breadth	Height	Remarks
165	1·05	0·15	0·22	
166	0·70	0·15	0·18	
167	—	0·14	0·21	In ruins
168	0·75	0·16	0·22	Found close beside trap 167.

Fig. 30. Trap 169. Danmarks Havn.
Seen from the south. The stone serving as a mark is seen to the right on the trap above the doorway. (Photo. by the author).

South of these four traps we found a fifth (169; fig. 30) at no great distance from the pass. It was unusually well-preserved, constructed of large and medium-large stones, 0·87 M. long, 0·17 M. broad and 0·19 M. high. The opening looked towards the east and the falling door had been moved to the side. This trap did not lie in line with the four above-mentioned, but it was easily seen, as the front covering stone was remarkable for its size and regular form and has certainly served as recognizable mark.

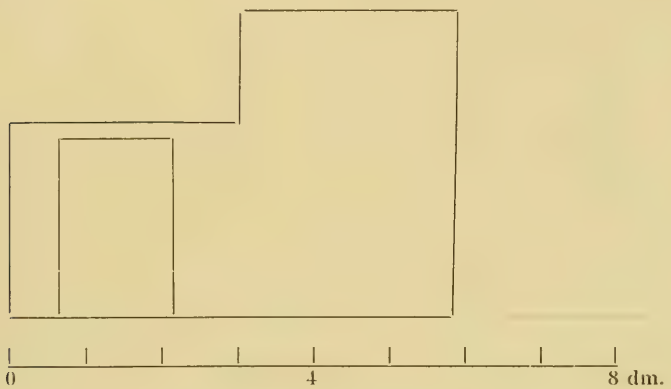
A couple of small cairns (170), each consisting of 5 to 6 stones

on the top of one another, were found by a small lake between the trap 169 and Østre Havnenæs.

South of Østre Havnenæs 6 traps were found.

On a slightly projecting unevenness in the coast line, ca. 2 kilometer south of Østre Havnenæs, we found 2 fox-traps at about 15 meters above the sea and about 50 meters from the shore. They lay north—south from one another at a distance of 15 meters and were built on the solid rocky knoll, which rose straight from the sea. The traps were not specially well concealed against the ground.

The north trap (171) was 0·91 M. long, 0·14 M. broad at the opening, 0·17 M. broad at the centre and 0·24 M. high. It was built of tolerably large stones; the opening looked towards the



E. N. E.; the covering stones nearest the opening had been removed, as if the animal captured had been taken out in this way. The door was in its place, but leaning towards a couple of ordinary locking stones. It was a slab of gneiss 2·5 cm thick, of a special form (see accompanying sketch). It was 0·58 M. long; in the one half 0·40, in the other 0·26 M. high. Its form and position in relation to the trap seem to indicate, as shown in the figure, that it has been meant to turn round a point in the broad end. (The heavy lines of the figure show the door opening and the falling stone in the closed position, the dotted lines the raised stone).

The south trap (172) was 0·90 M. long, 0·19 M. broad and 0·25 M. high. It was very solidly built and its back wall was formed by a large, flat stone, placed obliquely, which afforded an exceedingly strong fixture. How the trap was worked, I did not investigate. No

falling door was found. As in the north trap, the front covering stones had been removed. The opening looked towards the E. N. E. Both the traps were completely blocked up with snow on my visit in February 1908.

On a similar projection in the coast-line, about 500 meters south of these 2 traps we found 2 others at a height of ca. 8 meters above the sea and ca. 20 meters from the shore. They lay N. W.—S.E. of one another at a distance of 18 meters and the surroundings were similar to those in which the traps 171 and 172 were found, and they were just as prominent as the latter.

The north—west trap (173), which was built of small stones, was 0·75 M. long, 0·13 M. broad and 0·17 M. high, with the opening towards the S. E. The door, which was in its place, was of the same form as that to trap 171 (see the figure). It was formed of a slab of gneiss, 1 to 2 cm thick (somewhat unevenness in thickness), ca. 0·55 M. long and respectively 0·40 and 0·22 M. high. Entrance to the trap has been very difficult, as an ordinary falling door was placed very close outside the turning door, supported outside by heaped stones. This arrangement in conjunction with a small, oblong, rectangular stone, which stood on end between the ordinary falling door and the turning slab, was intended to prevent the latter from being pushed aside by the captured animal. The front covering stones had been removed and moss was growing in the interior.

The south – east trap (174), which was 0·68 M. long, 0·15 M. broad and 0·22 M. high, was built of large and heavy stones. The falling door was away and the covering stones had been removed from both ends of the trap, but the long walls and the back wall still stood. The opening looked towards the S. E.

These traps were also blocked up with snow when I visited them.

Further south on the peninsula we found 2 more traps (175), but they were quite buried in the snow.

On the northernmost part of the east side of Harefjeldet we found a trap (176) lying about 170 meters above the sea. It was 0·66 M. long, 0·17 M. broad and 0·19 M. high. The opening looked towards E. by N. and the falling door, which consisted of a flat slab of gneiss ca. 1·75 cm thick, had been moved to the left side of the entrance. When the trap was visited in February 1908 it was half-filled with snow. It was built on a bare, windy, ice-marked piece of rocky ground, which stood out from the loose material; it was formed of comparatively small stones with a few larger among them. It was quite prominent against the land, and

about 6 meters higher up there was further a large, easily recognizable stone, whose side towards the trap always stood out black against the white snow and thus formed a good mark of recognition.

Many stone remains were found on Vestre Havnenæs, along the shore west of this and northwards along the shore of Stormbugt.

At the outermost end of Vestre Havnenæs (fig. 31) there are several hollows in the cliffs, which collect water from the melting snow, so that excellent reservoirs of water were formed here; in the neighbourhood we found 11 tent-rings, 2 shelters, 1 trap, 2 perma-

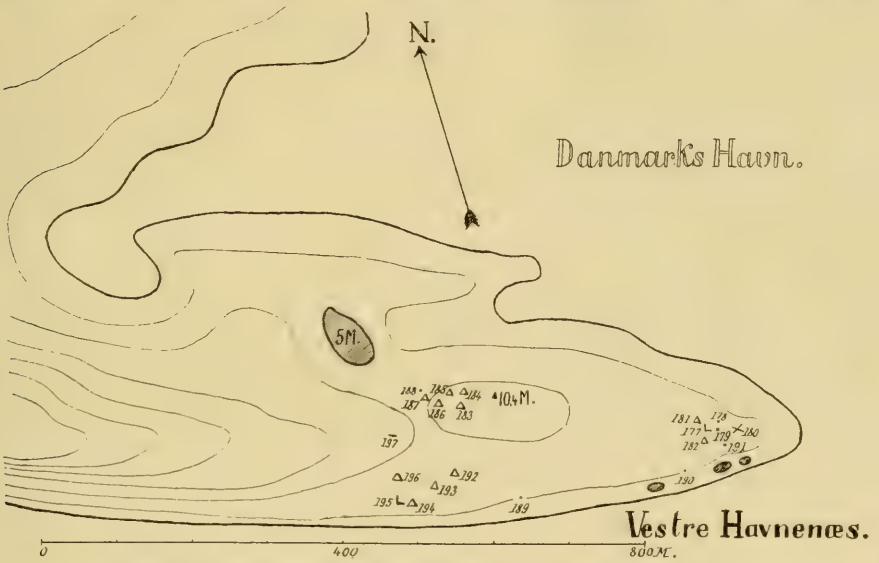


Fig. 31. Settlement on Vestre Havnenæs. Danmarks Havn.
The cairn of the Expedition lies 10·4 meters above the sea. (Sketch by the author).

nent and 3 temporary meat-stores, 1 fire-place and 1 meat-depot built by children.

The one shelter (177) was found almost on the middle of the ridge forming the Naze, quite 100 meters from the point. It was built on earth and its floor was partly paved with flat stones; probably the whole floor was originally so paved. The form of the shelter was almost oval, somewhat pointed at the corners, with the longest axis in the direction north—south; it was 2·20 M. long, 1·10 M. broad. The north and west sides were built up of small stones to a height of ca. 0·32 M.; the other sides consisted of a single row of stones.

On the north side of a small natural wall, a couple of meters to the east of the shelter, we found a double, permanent meat-

depot (178). The two spaces lay east—west of one another and were separated by a wall, which like the outer walls was formed of stones placed on end. Both spaces were four-sided, 0·40 M. high. The one on the west side was 0·52 M. long and 0·46 M. broad; it was covered over but empty. The one to the east was paved with flat stones and was found without a roof; it was 0·52 M. square on the ground but a little narrower above.

South of this permanent meat-depot — at a distance of only 6 meters — we found a small, true copy of it, possibly the work of children (179). It was built exactly like the larger and like this was placed on the north side of a natural wall. The western compartment was 0·29 M. long, 0·36 M. broad and 0·11 M. high. The eastern was 0·32 M. long, 0·27 M. broad and 0·11 M. high. In both the roof was away, though not completely so in the western. (Fjord seal).

The stone remain furthest out on the Naze consisted of a broken down trap (180). Only the long walls, the back wall and the locking stones still remained, the remainder lay scattered about in great disorder and the falling door was wanting. The trap was placed on the top of a rocky knoll 1 meter higher than the shelter 177; the opening looked towards the E. S. E. The trap has been 0·72 M. long, 0·20 M. broad and 0·20 M. high.

An unsually large tent-ring (181) was formed of such large pieces of rock that no one man could have lifted them. Its form was almost four-sided, 4·08 M. long in north to south and 3 70 M. broad along the edge of the platform in east to west direction. Two door openings occupied almost the whole of the south wall, the one to the west being 0·62 M. broad, the one to the east 0·55 M. broad, and they were separated by a stone wall 0·77 M. broad and 1·88 M. long, which led out from the tent-ring and along with a row of stones from the outer side of each doorway formed two passages. From the platform-edge to the back wall the distance was 2·22 M. The stones of the edge of the platform were large and sharp-pointed. The floorplace consisted of gravel. Within the eastern door opening was found a collection of small stones resembling a fire-place.

Details of the other tent-rings:

No.	Form	Length	Breadth	Platform edge		Distance from platform edge		Breadth of doorway	Doorway towards	Passage from doorway	Remarks
				Length	Direction	to backwall	to doorway				
182	oval	2·80	2·50	—	—	—	—	0·70	S.	—	Large stones.
183	circ.	—	—	2·85	E.—W.	2·10	0·75	0·70	S.	1·30	Stones in back wall the smallest. Inside doorway to the left a small collection of stones.
184	oval	—	—	1·90	S.W.—N.E.	0·95	0·70	0·60	S.E.	0·23	Old. Stones sunken.
185	oval	—	—	1·40	E.—W.	1·20	0·40	0·60	S.	0·40	Old. Stones sunken.
186	oval	3·00	2·00	—	—	—	—	0·70	S.	—	Large stones. Much disturbed. Platform stones in great disorder.
187	oval	—	—	2·00	S.W.—N.E.	1·15	0·65	0·65	S.E.	—	Large stones, larger than one man could lift.
192	circ.	2·50	2·50	—	—	—	—	—	—	—	Much disturbed.
193	circ.	1·25	1·25	—	—	—	—	—	—	—	Much disturbed.
194	circ.	3·00	3·00	—	—	—	—	—	—	—	Much disturbed.
196	circ.	2·50	2·50	—	—	—	—	0·45	S.	—	Built of unusually many stones.

In the middle of the ring 186 we found a very conspicuous, white piece of quartz (cf. p. 197).

The shelter 195 was formed of small, flat, longish stones and had the form of an acute angle with the point towards the north. It was 1·50 M. long and up to 0·65 M. broad.

The fire-place (197) was found on the centre of the ridge of the Naze and was open towards the S. S. W.

Details of the temporary meat-stores:

No.	Form	Diameter	Remarks
188	circ.	1·00	Close N. W. of ring 187. A heap of ordinary stones. Open and empty when found.
189	circ.	1·00	Ordinary stones.
191	circ.	1·00	Ordinary and larger stones.

A permanent meat-depot (190) was formed of small stones on rocky ground; it was 0·30 M. in diameter and 0·10 M. high. (Fjord seal). A small pool was found on the naze N. W. of the settlement.

On the coast west of Vestre Havnenæs we found 8 tent-rings, 1 shelter, 3 permanent and 6 temporary meat-stores, 1 semicircular wall and 1 hare-barrier.

West of Vestre Havnenæs, in a depression, lay a tenting ground and here we found 3 tent-rings ca. 50 meters from the south beach; they lay side by side, at a distance of 2—3 meters in the direction east to west.

No.	Form	Length of platform edge	Direction of do.	Distance from do. to back wall	Distance from do. to south wall	Remarks
198	oval	2·50	E.—W.	1·25	1·00	Small stones. Doorway indistinct. Stones on floor the size of a fist.
200	oval	2·50	E. – W.	2·00	1·00	Large stones. No doorway. Stones on floor the size of a fist.

The third ring (199) was formed of large stones; it had an almost straight south wall, 2·10 M. long, but was round otherwise; the distance between the south wall and the back wall was 2·10 M. From the western end of the south wall led a row of stones 1·50 M. long out in a S. W. direction, whilst at the other end of the south wall there was a doorway 0·30 M. broad. From this a passage 1 M. long led outside. The floorplace was uneven; stones the size of the fist were found here as in the immediate neighbourhood.

In line with the back wall and close to the west of the tent-ring 200 we found 2 temporary meat-stores. They were both circular, formed of large stones and without cover; the one (201) was 1 meter in diameter, the other (202) 1·25 M.

Close to the south of the meat-stores we found a four-sided shelter (203), 1·50 M. long in north to south and 0·60 M. broad. The door opening looked towards the north and was 0·45 M. broad.

On stony ground half a hundred meters N. N. W. of the shelter 203 lay ruin 204, consisting of a semicircular, closely built wall, perhaps a hunting shelter, with many large stones around which had fallen down. It was ca. 0·60 M. high and ca. 0·50 M. thick. The floorplace west of the wall was 1·60 M. long in north to south and 1·30 M. in east to west direction.

Near the wall, to the north and the west, we found 4 temporary meat-stores (205) formed of large stones; 1·50 M. in diameter.

About halfway between Vestre Havnenæs and Baadskæret we found — also in a hollow — a second tenting ground with 5 tent-rings and 3 permanent meat-depots close to the east of a steep slope. The ground consisted of uniform beach-materials, gravel and small stones, and lay on the top of a moderately steep snow-slope ca. 50 meters broad. In summer this slope fell abruptly and it was only in winter and spring that there was access to the tenting ground from the sea. At this place we found — especially towards the S. E. — a quantity of bones of fjord seal and narwhal.

Two of the tent-rings were formed of selected flat and thin stones, both in the margin and in the platform edge; further, in the middle of the edge of the platform lay a collection of large, flat stone slabs — presumably the place for the lamp. For doorstep there was a flat stone and to the left inside the doorway lay another collection of stones for a lamp[1].

Measurements of these two tent-rings:

No.	Form	Platform edge's		Distance from platform edge		Breadth of doorway	Doorway towards	Passage out from doorway	Remarks
		Length	Direction	to back wall	to doorway				
206	oval	2·75	E.—W.	1·70	1·25	0·60	S.	—	6 meters N.W. of tent ring 207. (Fjord seal).
207	oval	3·00	E.—W.	1·80	1·20	0·60	S.	1·50	West wall of passage only 0·75 M. long. (Fjord seal).

Close to the west of ring 207 we found a ring (208) which had been broken up (fjord seal).

The permanent meat-depots:

No.	Form	Length	Breadth	Height	Remarks
209	square	1·50	1·50	—	20 meters east of tent-ring 208, on the west side of a rock. Large stones.
210	circular	0·60	0·60	0·50	Just above the snow-slope, 15 meters south of tent-rings. Well built. Only large stones. No roof.
211	circular	0·60	0·60	0·30	Near the preceding. Partially in ruins.

About 10 meters west of the other stone remains we found a tent-ring (212) which was different from the above-described in having ordinary boulders in the margin. It was oval, 2·50 M. broad along the edge of the platform in east to west direction. From this

[1] Cf. Knud Rasmussen 2: p. 5.

to the back wall the distance was 1·70 M., to the door opening 1·30 M.; the latter looked towards the south and was 0·50 M. broad. Some flat stones for lamps were found both in the middle of the platform edge and to the left, inside the doorway. A very conspicuous piece of white quartz (cf. p. 197) lay on the floorplace between the middle lamp-stones and the door opening. In the middle of the doorway lay a flat stone like a doorstep. (Polar bear, reindeer).

Under the north end of the abrupt, rocky slope we found a small, circular tent-ring (213), ¦1·25 M. in diameter. The platform edge, which consisted of a close row of small stones, lay in the direction north to south and divided the ring into two equal parts. In the periphery ordinary and moderately large stones had been used. The door opening was 0·45 M. broad and looked towards the east; on each side it had a stone 0·35 M. long, which formed a passage leading out from the ring. Just inside the doorway to the right, the stones of the wall bent outwards for a length of 0·50 M., so that a curved niche 0·35 M. deep was formed. The platform had been better levelled than the rest of the floorplace.

On a level part between this tent-ring and Baadskæret we found a long row of stones (214), which extended in the direction S. E. — N. W. On June 6th 1908 the snow permitted me to see ca. 45 meters of this row. About every eighth meter some few stones lay outside the row and these have probably been built up on the top of one another but were now fallen. At one place these stones were replaced by a large stone, which lay in series with the others. The stones were of medium size and lay quite loose. They were closest at the S. E. end of the row, which continued in under the snow; possibly this structure has been intended for the capture of hares, strips of hide with hanging loops being suspended between the built up stones[1].

At Wendels Pynt we found 8 tent-rings, 1 shelter, 1 permanent and 1 temporary meat store.

On the rocky knoll which lies just ¦opposite Baadskæret, we found a shelter (215) right up on the top. It was four-sided with rounded corners, 1·75 M. long in N. W. — S. E. direction and 1·25 M. broad. The door opening looked towards the S. E. and was 0·45 M. broad. The shelter was placed over a rocky cleft in which some earth had collected and the floorplace was partly covered with flat stones, partly with soft grass and moss. From this we had quite an excellent view over the water, right from Maroussia to Snenæs. (Fjord seal).

East from this shelter, almost at the top, there was a small,

[1] Cf. STEENSBY: pp. 309—11, illustration p. 308.

uncovered, permanent meat-depot (216), built very solidly of large stones. It was four-sided, 0·50 M. along the sides at the base, but the walls sloped inwards, so that the upper hole was only 0·40 M. square. The height was 0·40 M. (Fjord seal).

Below the rocky knoll at Wendels Pynt, which in the west bounds the small creek (see Chart, Pl. V), we found an uncovered, temporary meat-store (217), built of large stones. It was circular, 1·50 M. in diameter.

In the pass which leads from the creek north round the rocky knoll to Stormbugt were 8 tent-rings.

The tent-ring 218 lay N. E. of the rocky knoll, 12 meters from the creek and 3—4 meters above the sea. It was very old and almost circular. The edge of the platform, which was in the direction east to west and divided the tent-ring into two equal parts, was 2·40 M. long and consisted of flat stones placed on end in two rows, the distance between these rows being 0·45 M. No door opening was found.

The 6 rings (219—224) described in the following table (p. 254) had a more recent character.

Tent-ring 225 was found 15 meters W.¼N. W. of the ring 224 and was partly blocked with snow on $^{6}/_{6}$ 1908. It was very old, oval in form. The platform edge was 2·40 M. long, in the direction north-south and consisted of flat stones placed on end in two rows, the distance between these rows being 0·35 M. From the platform edge to the back wall the distance was 1·90 M., to the doorway 0·65 M. The latter looked towards the E. S. E. and was 0·60 M. broad. (Fjord seal).

On the southern part of the east shore of Stormbugt, between Wendels Pynt and Vesterdalen, we found 16 tent-rings, 1 shelter, 2 traps, 5 permanent and 16 temporary meat-stores, 7 fire-places, 1 set of kayak rests and 1 other ruin.

This stretch consists of a series of low hills along the coast with intervening hollows. The latter are only 10—15 meters lower than the hills and afford tenting grounds with an excellent view[1] over the ice between Snenæs and Kap Helgoland.

On the nearest of the larger ridges N. W. of Wendels Pynt we found such a tenting ground, with 2 rings, 4 permanent and 3 temporary meat-stores, 4 fire-places and 1 stone row. Many bones lay scattered about on the tenting ground. (Dog, polar bear, walrus, fjord seal, reindeer (cast-antlers) and musk-ox).

The tent-ring 226 was circular, 2·50 M. in diameter, and was divided by the platform edge into two equal parts. The doorway was 0·50 M. broad and looked towards the S. E. (Fjord seal, reindeer).

[1] Cf. Parry: p. 90.

No.	from preceding: Distance	from preceding: Direction	Distance from creek	Distance from Stormbugt	from foot of rocky knoll: Distance	from foot of rocky knoll: Direction	Height above the sea	Form	Tent-ring's: Length	Tent-ring's: Main direction	Tent-ring's: Breadth	Platform edge's: Length	Platform edge's: Direction	Distance from platform edge: to back wall	Distance from platform edge: to doorway	Breadth of doorway	Doorway towards	Remarks
219	15	N. N. W.	20	—	—	—	6	oval	3·00	E.—W.	2·40	—	—	—	—	—	—	Large stones. Covered with snow $^{6}/_{6}$ 08.
220	10	W. by S.	25	—	—	—	12	oval	-	—	—	3·60	N. E.—S. W.	1·25	1·45	—	—	Several stones wanting in ring. Level platform.
221	15	N. W.	30	—	—	—	14	oval	2·80	N.W.—S.E.	1·30	—	—	—	—	—	—	In ruins. Highest up on the pass.
222	10	W.	40	—	—	—	—	circ.	—	—	—	2·40	—	—	—	—	—	In ruins.
223	—	—	—	30	30	N. W.	5	oval	—	—	—	3·00	E.—W.	1·90	1·30	0·70	S.	Pieces of whalebone found under tent stones to right of doorway.
224	2	E. N. E.	—	30	30	N. W.	5	oval	—	—	—	2·40	E.—W.	1.25	0·65	0·60	S. S. E.	

From the back wall of the ring a 3 meter long row of larger stones (227) led towards the W. N. W. South of the row of stones, near to the tent-ring, we found a fire-place (228) with the opening to the south-east. It was 0.15 M. square and was built up against a large stone. Close to the S. E. of the ring there was another fire-place (229); likewise with the opening to the S. E. It was 0·30 M. square, but not more than 0·04 M. high. A couple of meters E. N. E. of the tent-ring lay an uncovered, temporary meat-store (230), 1·25 M. in diameter. (Fjord seal).

Tent-ring 231 lay 3 meters to the south of the ring 226; it was in ruins. In its centre there is now a fire-place (232) with burnt remains of bones of the fjord seal. Some meters from this lay two small, broken up, temporary meat-stores (233). (Fjord seal).

In a fire-place (234) which lay to the north of the tenting ground, charred bone remains were found. (Fjord seal).

The 4 permanent meat-depots had no covers and they each consisted of a well-built, stone chamber. The measurements are shown in the table.

No.	from foregoing		Stone chamber's			Bones found	Remarks
	Distance	Direction	Length	Breadth	Height		
235	3	N.	0·70	0·40	0·50		
236	16	S. by W.	1·00	0·54	0·50	Fjord seal	found outside meat-depot.
237	8	W. S. W.	1·10	0·70	0·54	Dog	
238	10	W.	0·73	0 50	0·40	Fjord seal	

Half a hundred meters further to the N. W. lay the next tenting ground, 10 meters from Stormbugt and only 3—4 meters above the sea. Here we found 1 tent-ring, 1 trap, 1 permanent meat-depot and 3 temporary meat-stores.

The tent-ring (239) was oval. The platform edge, which lay in the direction east to west, was 2·90 M. long. The distance from this to the back wall was 2·90 M., to the doorway 0·90 M. The whole of the platform was paved with flat stones, whereas the remainder of the floorplace was covered with rough stones from the beach. The door opening was 0·40 M. broad and looked towards the south. It had a passage 0·90 M. long, leading out from the ring, which was somewhat different from those seen elsewhere, being closed at the end but with an entrance 0·40 M. broad on the east

side. The stones of the ring were so large, that one man could scarcely have lifted them. (Fjord seal, musk-ox).

The trap (240) was found 4 meters south of the tent-ring; it was constructed of small stones and was 0·61 M. long, 0·11 M. broad and 0·18 M. high. The opening looked towards the S. S. W. The falling door, which consisted of a stone-slab 0·02 M. thick, was moved to the side; the pointed stone in the back wall, on the other hand, was still in its place.

Four meters south of the trap lay the 2 temporary meat-stores (241). They were ca. 1 M. square and built of large stones. The covering stones, which had been removed, were flat.

The third, temporary meat-store (242) also had no covering; it lay 5 meters east of the two above-mentioned. It was 0·75 M. square, but was built of stones from a larger meat-store, which had been 2 M. square and whose outlines could still be seen. (Dog (puppy), walrus, fjord seal, reindeer (cast antler), whale).

The permanent meat-depot 243, which likewise had no roof, was found 30 meters north of the tent-ring 239; it was 1 M. every way and was partly built of flat stones placed on end. (Fjord seal).

On the north side of the small naze furthest south in Stormbugt 1 tent-ring and 3 temporary meat-stores were found.

The tent-ring (244) was obviously very old and almost circular in form. The platform edge lay in north-south direction and was 3 M. long. From this the distance to the east wall was 1·90 M., to he west wall 1·25 M.; no doorway could be seen. Flat stones had been used in building the tent-ring.

Further out on the naze we found an open, temporary meat-store (245) of circular form, 1 M. in diameter, and formed of large stones.

South of the tent-ring, at a distance of 8 meters, we found 2 small, temporary meat-stores (246). They lay up against a precipitous cliff. Ribs of a marine animal were found here.

On the north side of a small naze, just north of that mentioned, we found 3 tent-rings, 1 temporary meat-store and 2 fire-places.

The two tent-rings (247), which lay at a distance of 3 meters from one another, had a very old appearance. They had two rows of platform stones placed on end; their other stones were small, mostly flat; the floorplace was covered with small stones. In the middle of each tent there was a fire-place (248) close up to the edge of the platform.

The third tent-ring (249) was found 3 meters north of the more northerly of the two just mentioned, ca. 10 meters from the shore and ca. 5 meters above the sea. It lay on pebbly ground and was built of that material.

The temporary meat-store (250) was ca. 0·75 M. in cross-section. It was covered with snow on June 7th 1908.

The tent-rings 251–258 were found northwards along the coast (cf. Chart, Pl. V).

An old, temporary meat-store (259) was found 10 meters east of the ring 258. It was circular, not covered, and built of very large stones; it was 1 M. in diameter.

A collection of large stones was found 10 meters east of the meat-store. Some of these stones composed a set of kayak rests (260), raised only 0·25 M. above the ground. The rests lay in the direction north—south and the distance from the north to the middle rest was 1·50 M., between the middle and the southern 1·80 M. The northern and middle rests, each of which consisted of two stones set up against each other, were 0·75 M. long in the direction east—west. The southern rest consisted of a single stone 0·35 M. long. Of the remaining stones some were placed together as if for a fire-place (261).

On a small point, 30 meters from its outer end, a double shelter (262) of almost triangular form was found, the most acute angle pointing towards the south. The longest wall, which lay S.—N., was 1·40 M., the wall in S. W.—

No.	From foregoing: Distance	From foregoing: Direction	Distance from beach	Height above sea	Form	Platform edge: Length	Platform edge: Direction	Distance from platform edge: to back wall	Distance from platform edge: to door opening	Breadth of door opening	Opening towards	Diameter of ring	Remarks
251	100	N. N. E.	50	15	circ.	2·00	N.—S.	1·00	1·00	0·60	S. W.	—	Small stones.
252	40	N. W.	—	10	circ.	—	—	—	—	—	—	2·50	Small stones.
253	18	N. W.	—	—	oval	2·00	N. W.—S. E.	1·30	1·60	—	S. W.	—	Ordinary stones.
254	5	N. W.	—	—	circ.	1·25	N.—S.	0·62	0·63	0·40	W. S. W.	—	Old.
255	2	N.	—	—	—	—	—	—	—	—	—	—	Old. Platform.
256	3	N.	—	—	—	—	—	—	—	—	S.	—	Old. Platform. Large stones.
257	15	N.	—	—	—	—	—	—	—	—	—	—	Old. Small stones.
258	6	N. W.	—	—	—	—	—	—	—	—	—	—	

N. E. 1·20 M. and the third wall, which was somewhat curved, 0·90 M. The opening looked towards the south and was 0·25 M. broad. The shelter was divided into two spaces by a wall parallel with the longest wall and 0·30 M. distant from this.

An apparently old tent-ring (263) was found 5 meters S. E. of the shelter.

On a more prominent naze, south of Vesterdalen, we found a trap (264) 10 meters from the outer point. It was badly built of small, crumbling stones, 0·60 M. long, 0·14 M. broad and 0.16 M. high; it stood on solid rock. The hindmost, covering stones had been removed; the falling door, which consisted of a thin stone slab, was moved to the side; the pointed stone in the back wall was however in its place.

The following, temporary meat-stores were found near the trap:

No.	Number of meat-stores	From trap 264		Form	Diameter	Height	Mutual distance	Remarks
		Distance	Direction					
265	2	8	W.	circ.	1·50	—	1	Large stones; no cover.
266	1	5	E.	circ.	0·50	0·50	—	
267	2	20	S.	circ.	1·00	—	5	Large and small stones. Solid rock took part in structure of most southerly. (Walrus).

Baadskæret (lat. 76° 45', long. 18° 51'). Here we found 11 tent-rings, 13 traps, 10 permanent and 9 temporary meat-stores, 1 fire-place and 1 set of kayak rests.

The islet lies south of the east side of Stormbugt, in continuation of this and not very far from land. It is low and is really only one large heap of stones with a few free patches, where smooth rock or strand gravel appear. Near the western end there is an indentation in the rocks, which goes across the islet in the direction N. to S. This may be suitably described as a double slip, which has an even fall towards the sea at both ends; the ground consists of fine gravel and pebbles. The length of the islet from E. to W. is ca. 300 meters, its breadth ca. 50 meters.

The east and south-east beaches were covered with naturally heaped-up stones. Here on this very uneven ground lay 2 permanent meat-depots at a distance of 15 meters from one another. They were so small that they might have been taken for the work of children, but on the other hand there were so many of these small,

permanent, meat-depots on the islet (286—287—292), that the matter is doubtful. The one (268) was built of small stones, circular, 0·15 M. in diameter and 0·15 M. high; in this pieces of narwhal teeth were found. The second (269) was built of larger stones, circular, 0·30 M. in diameter and 0·20 M. high.

On a huge stone heap at the eastern end of the islet we found 4 permanent meat-depots (270). These were placed some distance up on the islet and had no roof when discovered. They were built of very large stones and were circular in form, 1 to 1·50 M. in diameter. The distance from one to the other was only a few meters.

On the same stone heap and partly round about the meat-depots stood 12 fox-traps. These were completely concealed in the mass of rocks at the place, and Baadskæret may be regarded as a typical spot for the capture of foxes en masse. The following table gives particulars regarding these traps.

No.	Trap's			Opening towards	Thickness of falling door	Pointed stone in back wall	Remarks
	Length	Breadth	Height				
271	0·61	0·15	0·17	E.N.E.	thin	—	Covering stones removed. Falling door at one side Mark-stone for trap (see p. 244).
272	0·61	0·13	0·17	N. E.	0·025	—	Well-preserved. Locking stones heavy. Falling door in its place.
273	0·58	0·17	0·17	S. E.	thin	—	Mark-stone for trap. Falling door in its place.
274	0·75	0·12	0·18	S. E.	0·03	—	Long walls finely built. Falling door at one side. Front covering stones partly removed.
275	0·65	0·13	0·16	S.	thin	present	Locking stones heavy. Falling door at one side.
276	0·75	0·16	0·16	S. S. E.	thin	present	Mark-stone for trap. Specially well built. Locking stones heavy. Falling door displaced.
277	0·65	0·16	0·12	E. S. E.	thin	present	Mark-stone for trap. Specially well built. Falling door in its place.
278	0·65	0·13	0·15	E. S. E.	—	—	Much disturbed.
279	0·60	0·18	0·17	E.	rough	present	Built of medium and small stones. Falling door in its place. One of the uppermost covering stones removed. Trap now in the National Museum, Copenhagen.
280	0·80	0·20	0·17	S. S. E.	0·03	—	Much disturbed.
281	0·70	0·12	0·20	S. E.	thin	present	Falling door in its place. Trap placed on the top of the islet.
282	0·75	0·12	0·12	S.	—	—	Much disturbed.

On the portion of the islet which lies to the east of the above-mentioned indentation, we further found 7 tent-rings, 1 trap, 3 small permanent meat-depots and 5 temporary meat-stores, partly along the south coast and partly near a small, now dried-up pool of freshwater on the ridge of the islet. The pool has been almost circular, ca. 10 meters in diameter, and has had a depth of 0·25 to 1 meter. I imagine that the occupation of the islet in the summer has been conditioned by the presence of this freshwater reservoir, as the snow does not lie permanently on the islet.

The measurements of the 7 tent-rings are given in the table p. 261.

Close to tent-ring 283 to the north we found a circular, temporary meat-store (284), 1 M. in diameter, formed of large stones.

Two small permanent meat-depots (286—287) similar to 268 and 269 were found 2 to 3 meters south of tent-ring 285. They were circular and constructed of ordinary stones. The first was 0·15 M. in diameter and 0·15 M. high, the other 0·50 M. in diameter and 0·25 M. high.

A small circular, temporary meat-store (289) was fouud 4 meters south-east of the tent-ring 288. It was constructed of ordinary stones, and was 0·50 M. in diameter and 0·20 M. high.

The fox-trap (290) stood 20 meters N. N. E. of the same tent-ring and was built of small stones, which had been taken in part from ring 294. The trap was 0·54 M. long, 0·13 M. broad and 0·14 M. high and the bottom was paved with flat stones. The door opening looked towards the south, the falling stone was away and the hindmost covering stones had been removed, but the pointed stone in the back wall was still in its place.

A circular, temporary meat-store (291) was found 10 meters east of the trap, 15 meters east of the pool. It was open, 0·30 M. in diameter and 0·30 M. high.

The permanent meat-depot 292 was built round a small circular hole in the ground and lay 10 meters N. by W. of the trap. It was constructed of ordinary stones 0·50 M. in diameter, 0·40 M. deep; it was open.

A temporary meat-store (296) was found in ruins 8 meters north of the tent-ring 295. It has been 1 M. in diameter.

A quite small, temporary meat-store (297) was found 20 meters north of tent-ring 294. It was open, circular, only 0·15 M. in diameter and 0·30 M. high.

In the indentation itself we found tent-rings both on the north and on the south side, as also other stone remains on the latter.

On the north side we found 2, partially disturbed, circular

No.	Distance and Direction from No.	Form	Length of platform edge, E.—W.	Distance from platform edge: to backwall	Distance from platform edge: to door opening	Breadth of door	Opening towards	Bones found	Remarks
283	— — —	circ.	2·95	1·75	1·25	0·70	S.	Fjord seal.	Found in middle of south shore, 15 meters from beach. Large stones. Lamp stone found at front edge of platform.
285	4 W. 283	oval	3·50	3·20	1·00	—	S. (?)	Feathers, fjord seal. reindeer (cast antler).	Large stones. Lamp stone in middle of platform.
288	— — —	circ.	3·00	1·75	1·25	—	S.	Feathers, fjord seal.	Found in middle of ridge of reef. Platform edge formed of flat stones.
293	8 N. by W. 292	oval	2·50	1·60	1·25	0·52	S.		Platform overgrown. A passage 0·30 M. long led out from doorway.
294	near E. 290	oval	2·50	1·40	0·60	0·60	S.	Reindeer.	A passage 0·60 M. long led out from doorway; (see No. 290).
295	5 E. 288	oval	2·50	2·50	1·25	—	S.	Fjord seal.	
298	— — —	circ.	3·15	1·25	1·90	0·50	S.	Fjord seal.	Found 10 meters N. W. from the dried-up pool of freshwater.

tent-rings (299 and 300), respectively 3·60 M. and 2·50 M. in diameter. The most easterly tent-ring (299) was covered with snow on $^{6}/_{6}$ 1908. (Fjord seal).

On the south side we found tent-ring 301, 20 meters from the beach and 3 meters above the sea. It was oval, 3·10 M. broad along the edge of the platform in east to west direction. From this to the back wall the distance was 2·90 M., to the doorway 1·65 M. The door opening faced the south, was 0·55 M. broad and had a passage outwards which was 0·80 M. long.

The somewhat defective tent-ring 302 was found 3 meters more to the west. It was circular, 3·50 M. along platform edge in east to west direction; from this to the north wall the distance was 2·50 M., to the south wall 1·00 M.

A fire-place (303) was found 5 meters S. S. E. of the tent-ring 301. It was open towards the south, square-shaped, 0·40 M. long (in the direction north-south), 0.24 M. broad and 0·14 M. high.

A broken-down set of kayak rests (304) was found 4 meters S. S. E. of the fire-place. Only two rests remained, at a distance of ca. 3·75 M. from one another. The one rest, probably for the middle of the kayak, has consisted of a heavy stone, 0·86 M. long, which has lain upon two others, so that the height of the rest has been 0·45 M.; the other has consisted of 3 stones, set up to a height of 0·85 M.; the length of the uppermost stone here has been 0·25 M. The sloping ground has probably been used as the third support for the kayak, ca. 3—4 meters from the first-mentioned rest.

Close to the tent-rings 301—302, to the south, we found 3 circular temporary meat-stores (305, 306, 307), respectively 1·25 M., 1·00 M. and 1·50 M. in diameter.

West of the indentation, where the islet again rises in a stone-heap, we found a well-built, permanent meat-depot (308) lying in the centre of the islet, close to the slope towards the indentation. It was square-shaped, compactly built of large stones. The length was 0·85 M., the breadth was 0.65 M. and the height now 0·60 M. but has probably been 0·10 M. higher, as part of the stones had fallen. It was empty.

A couple of meters north of this, we found a temporary meat-store (309), in which many stones were wanting. It had been 1 M. in diameter.

Kap Helgoland (lat. 76° 43′, long. 19° 10′). Here we found 2 tent-rings and 1 temporary meat-store.

The promontory called by this name is the N. W. point of Store Koldewey and consists of a relatively low naze. The tenting

ground was found on the north side of the point. The ground is raised sea-bottom with small stones and gravel, which do not permit of water collecting. In the neighbourhood of the tenting ground, in both of the years we visited the place, there were several ice-bergs, which formed a resort for bears and seals. The land itself has scarcely yielded much hunting; I found absolutely no antlers of reindeer there and only a few tracks of musk-ox; on the other hand, ptarmigan, hares and foxes occurred and seals were often seen on the ice (late in May 1908).

The one tent-ring (310) lay ca. 50 meters from the beach of a small creek. It was found ca. 5 meters above the sea. It was circular, constructed of ordinary stones. The breadth along the platform edge was 3·60 M., and the distance from this to the back wall 1·20 M., to the doorway 2·40 M.; the latter looked towards the beach in N. N. E. direction and was 0.50 M. broad. A row of stones, 1 M. long, led outwards from the west side of the doorway. (Fjord seal).

About 15 meters further to the E. N. E. lay another tent-ring (311), which was somewhat oval and constructed of ordinary stones. The breadth along the platform edge was 3·80 M.; from this to the back wall the distance was 2·20 M., to the doorway 1·40 M. The latter looked towards the N. N. E., was 0.78 M. broad and had a passage, 0.82 M. long, which led outwards. (Bean-goose, fjord seal, reindeer).

The temporary meat-store (312) was found ca. 20 meters north of the last-mentioned ring, 18 meters from the head of the creek and ca. 3 meters above the sea. It was well built of stones so heavy that one man could scarcely have lifted them, oval, 1·20 M. long and 1·10 M. broad, but partially uncovered and empty.

East shore of Stormbugt (lat. 76° 47′, long. 18° 52′). Here we found 6 winter-houses, 24 tent-rings, 2 traps, many permanent meat-depots and temporary meat-stores, 4 graves, 2 receptacles at graves and 3 stone structures made by children.

The district referred to here is that part of the east shore of Stormbugt, which lies north of Vesterdalen (see Chart, Pl. V); the southern part has already been discussed under "Danmarks Havn with immediate neighbourhood". About 1 kilometer N. of Vesterdalen lies a broad, low naze; on this and to the south of it we found a tenting-ground extending along the whole of the low, gravelly shore.

A little inside the naze lie some cliffs, one of which has been a burial place. North of the naze we found 6 winter-houses[1] in

[1] Mylius-Erichsen writes in his diary: "$^{6}/_{9}$ 06. — Jørgen and Freuchen have found house-ruins suitable for excavation between the harbour and Stormkap."

2 groups each of 3 houses; the distance between the groups was ca. 100 meters. The shore here is far steeper than further to the south. The land rises behind the winter-houses and on a little plateau, 20—30 meters higher, we found another burial place. The plateau continues into Varderyggen, which to the north of the winter-houses falls evenly down to the beach. In the springtime many seals are seen on the ice in Stormbugt and a few icebergs or deep ice-clumps are often found off the settlement, which naturally improves the hunting possibilities. Regarding the respective positions of the stone remains reference may be made to the sketch (fig. 32).

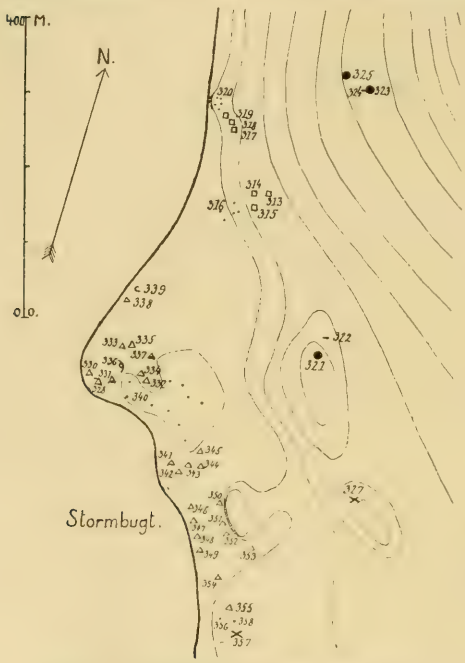


Fig. 32. Settlement on the east shore of Stormbugt. (Sketch by the author).

The winter-houses were examined both by MYLIUS-ERICHSEN and myself, incompletely however, as the frozen ground did not permit us to get right to the bottom in all the houses. Regarding the form and size of the winter-houses reference may be made to Pl. II, to which the following notes may be added.

The winter-house 313 had a comparatively heavy roof, the stones being selected, large, flat stone-slabs, heavier than usual. The roof had fallen (fig. 11). The platform was formed of gravel and covered with flat stones; the bottom of the house-passage lay lower than the floor of the house. (Polar bear, fjord seal, reindeer).

The winter-house 314 was found 15 meters west of the foregoing. The main platform was formed of earth covered with flat stones. We thus have a case here, where the Eskimos have not chosen a very suitable material for the platform, but have been contented with what they could find at the place, namely earth. As already remarked, this has the disadvantage that the dampness is not absorbed but collects on the platform. Solid rock formed a natural side-platform (see Pl. II), which has been used for the lamp. The edge of the main platform was formed of stones placed on end, which reached from the floor of the house up to the level of the platform

lying 0·25 M. above the floor. The bottom of the passage lay lower than the floor of the house. (Walrus). Here we found among other things an unusually large woman's knife of slate.

The winter-house 315 was found a couple of meters south of the entrance to house 314. As in the latter the platform was of earth, covered with flat stones. Above the thin stone-flag, which covered the innermost end of the passage, a recess was found 0·25 M. deep, 0·30 M. broad and 0·25 M. high (fig. 33). The roof of the house had fallen. The bottom of the passage did not lie appreciably lower

Fig. 33. Front wall in the winter-house 315. East shore of Stormbugt. Seen from the inside. The doorway, the thin, flat covering stone and a recess above the latter are shown. Further the 2 triangular expansions at the ends of the front wall. (Cf. 315 in Pl. II). (Photo. by A. Lundager).

than the floor of the house. Between the roofing stones was a piece of a large whale-bone.

Round these winter-houses, which together formed the southern group, lay scattered many bones (fig. 11). (Hare, polar bear, walrus (many ribs), bearded seal, fjord seal, reindeer (many antlers among them)).

Between the winter-houses and the beach were not so few permanent meat-depots (316), which had been formed by widening natural holes in the rocks to make sufficient space.

The winter-house 317 (fig. 1 and fig. 34), which belongs to the northern group, was found ca. 100 meters N. N. W. of the winter-

houses in the southern group. The platform was covered with flat stones. The bottom of the passage lay much deeper than the floor of the house.

Winter-house 318 lay 2 meters N. N. W. of the house 317 (fig. 34). As in the house 315, a recess was found above the innermost stone of the passage; it was 0·40 M. deep, 0.36 M. broad and 0.18 M. high. The platform consisted of gravel. The floor was not examined. (Walrus).

The winter-house 319 lay 4 meters N. W. of the house 318. The roof had been removed and the inside of the house was covered with vegetation; the passage was much broken down. The platform was formed of gravel and had no paving of flat stones. The platform edge was formed of stones placed on end and was 0·26 M. high. The floor consisted of gravel. The passage could not be examined, but its bottom seemed to lie lower than the floor of the house. (Hare, dog, walrus, bearded seal, fjord seal, reindeer, musk-ox, whalebone; further, a humerus and two lower jaws of human beings were found in this house).

Fig. 34. Winter-house 317 and 318. East shore of Stormbugt. Seen from the S. E. In the foreground 317. (Photo. by A. WEGENER).

Many bones were also found round about these 3 winter-houses in the northern group. (Walrus, bearded seal, fjord seal).

On a rocky knoll near the beach we found both permanent meat-depots and temporary meat-stores (320); holes in the rock had often been utilized in the formation of the first mentioned.

As already said, two burial places were found attached to this winter-settlement. One of these was situated on a rocky knoll at the foot of the point and here we found a grave as also a receptacle for grave articles.

The grave 321 was badly built. The end walls were formed of a single large stone; solid rock formed a portion of the one side wall; the other was built up of large and small stones. Several large and small stones had been placed over the grave, but some of these had fallen down or been removed. The length was 1·75 M., the breadth decreased from the head end (0·61 M.) towards the middle (0·48 M.) and the foot end (only 0·15 M.). The height was 0.48 M. at the head end, 0·28 M. at the other. The grave was half full of gravel and broken stones. The body seems to have lain extended with the head towards the N. N. E. The bottom of the grave was laid with broken stones. In the space inside we found — in addition to parts of the skeleton — some necklace ornaments near the head end and everywhere in the grave lumps of hair from the skin, in which the body has been wrapped. Pieces of wood were found outside the grave.

The receptacle 322, which has been used to contain the grave articles, was found ca. 30 meters N. N. E. from the grave, on the same knoll as this. It was open and empty when found, but had been well built of flat stones placed on end. Its ground-plan was triangular, 0·60 M. along the sides. The height was 0·35 M.

A trap (327), which was found on a small rocky knoll 200 meters S. S. E. of the grave, formed part, I believe, of this burial place; its opening faced towards the south. The trap was 0·60 M. long, 0·17 M. broad and 0·15 M. high and badly built of small stones. The hindmost stones had been removed and the falling door was placed at one side.

The second burial place was situated on the small plateau behind the winter-houses and here we found 3 graves.

The grave 323 was finely arched (fig. 12) and built of flat stones, some of which had fallen down into the grave. It was 1·50 M. long (main direction E.—W.) 0·52 M. broad and 0·33—0·50 M. high. Externally the grave was 1·90 M. long, 1·50 M. broad and 0·75 M. high. The bottom of the grave was solid rock. The inside space contained some skeletal parts of an adult but no skull; round these were stones and ice mixed with earth, with lumps of hair. The body here seems to have been doubled up and wrapped in skins; no grave articles were found. At the west end of the grave there was a small receptacle (324), 0·15 M. in all directions; it was now open and empty.

No.	Form	Tent-ring		Platform edge		From edge of platform to		Breadth of door opening	Door facing	Bones found	Remarks
		Length N.—S.	Breadth E.—W.	Length	Direction	back wall	door opening				
328	oval	—	—	3·00	N. N. W. —S. S. E.	1·90	1·25	0·40	W. S. W.	Bean-goose, walrus, bearded seal, fjord seal, narwhal.	Flat platform stones. Platform highest at back wall.
330	oval	—	—	3·00	E.—W.	1·90	1·25	—	S (?)	Birds, feathers, walrus, bearded seal, fjord seal, reindeer.	Door opening not distinguishable.
331	oval	3·00	2·50	—	—	—	—	—	—	Bearded seal, fjord seal.	Door opening not distinguishable.
332	oval	—	—	3·00	E.—W.	1·90	1·90	0·60	S.	Bean-goose, hare, bearded seal, fjord seal, reindeer.	Built of large stones.
337	circ.	2·50	2·50		—	—	—	—	—	Bearded seal, fjord seal, reindeer.	Door opening not distinguishable.

The grave 325, which was found ca. 40 meters N. W. of grave 323, was constructed in a rocky cleft which led in the direction N. N. E.—S. S. W. The one long wall was formed by the cliff, the other by a long stone, which was inclined over towards the opposite wall, so that the grave was almost closed; the openings left were covered by smaller stones. The grave was 1·25 M. long, 0·60 M. broad and 0·43 M. high. Inside, the grave had been packed with earth, broken stones and ice; in the space were parts of a skeleton, as also a quantity of hair, which had belonged to the skin wrapped round the body. On the skull, pieces of which lay at both ends of the grave, a few tufts of hair of dark-brown colour could be seen. No grave articles were found. A bear's tooth lay outside the grave.

Grave 326 was situated in the neighbourhood of the two mentioned. I measured this in the summer of 1907, but when I went to examine it more closely in the spring of 1908 I could not find it again; it was probably hidden under the snow. It was 1·00 M. long (in the direction east—west), 0·44 M. broad and 0·30 M. high. Externally it was 1·70 M. long, 1·20 M. and 0·80 M. high. It was empty apparently. In the neighbourhood of the grave I found a piece of the runner of a sledge of walrus-tusk.

The tenting-ground on the naze lay especially on the southern part. The ground here was even gravel, which was excellently suited for tenting on and the beach was also suitable for running up the kayaks. Here we found 8 tent-rings and many meat-stores. Many bones were found among the rings. (Bean-goose, polar bear, walrus, bearded seal, fjord seal, reindeer (also several antlers), narwhal). The above table (p. 268) gives particulars about 5 of the best preserved rings.

Tent-ring 328, which lay 2 meters above the sea, had two small additions, 2·00 and 1·50 M. square, and close to the ring to the north

Fig. 35. Temporary meat-store 340. East shore of Stormbugt. Seen from the north. (Photo. by A. Wegener).

there was a collection of white stones (329), probably children's playthings (cf. p. 198)[1].

The three other tent-rings (333, 334, 335) were in ruins. (Fjord seal in 334).

There has probably been another ring also, but its stones have been used by children for their games (336); in its present form there is a curved row of stones 5·50 M. long, about in the middle of which lay an oval ring 1·60 M. long and 1·50 M. broad (cf. p. 204 and fig. 13).

At some distance from the other tent-rings and furthest north

[1] Cf. Ryder: pp. 289—290.

No.	Form	Length	Breadth E.—W.	Platform edge		From platform edge to		Breadth of doorway	Doorway towards	Length of passage out from ring	Bones found	Remarks
				Length	Direction	Back wall	Doorway					
341	circ.	—	—	3·70	N.W.—S.E.	1·85	1·85	—	—	—		25 meters from shore; 1 meter above the sea. Large tent stones, flat platform stones; doorway indistinct.
342	oval	—	—	3·70	N.W.—S.E.	1·90	1·25	0·60	S.W.	1·00	Walrus, bearded seal, fjord seal, reindeer (incl. antlers).	Ordinary tent stones, flat platform stones.
343	oval	3·15	3·70	—	—	—	—	—	—	—	Polar bear, bearded seal, fjord seal, reindeer.	Ordinary tent stones, indistinct doorway. A large flat stone in centre of ring.
344	oval	—	—	3·70	N.W.—S.E.	2·00	2·00	—	—	—	Walrus.	Ordinary tent stones, flat platform stones. Doorway indistinct.
345	circ.	3·70	3·70	—	—	—	—	—	—	—		Small tent stones. No doorway.
346	circ.	—	—	3·75	N.W.—S.E.	1·90	1·90	0·60	S.W.	0·60		Platform levelled. (Fig. 36).
347	circ.	3·00	3·00	—	—	—	—	—	—	—		Stones much sunken. No doorway. (Fig. 36).
350	circ.	3·00	3·00	—	—	—	—	—	—	—		Ordinary stones. (Fig. 36).
351	circ.	2·80	2·80	—	—	—	—	—	—	—		Stones much sunken.
352	circ.	3·50	3·50	—	—	—	—	—	—	—		Stones much sunken.
354	oval	3·00	3·50	—	—	—	—	—	S.	—		Faint indication of platform edge. (Fig. 36).
355	circ.	2·50	2·50	—	—	—	—	—	—	—		

on the naze there was still another tent-ring (338). (Bearded seal, fjord seal, musk-ox and fragments of a large whalebone).

Close to the tent-ring in the N. E. we found a small semicircle of white stones (339), 1 M. broad (cf. p. 198)[1].

On the south side of the naze — in a small clump of rocks — there were many, large, well-built, permanent meat-depots and temporary meat-stores (340) (fig. 35). Large stones had been used for the store-places and in some cases holes in the rocks — covered with flat stones — so that they appeared like cellars.

Fig. 36. Tent-rings. East shore of Stormbugt.
Seen from the N. W. In the foreground the tent-ring 346, under the cliff to the left 350 and in the background 354. Tent-ring 347 (cf. the sketch fig. 32) can be detected due S. E. of 346, but the tent-rings 348, 349, 351 and 352 cannot be seen. (Photo. by A. Lundager).

The remaining tent-rings were found along the low coast south of the naze; information regarding these is given in the above table (p. 270).

Some bones were found between the tent-rings 346—355. (Walrus, bearded seal).

The tent-rings 348 and 349 were large, but were not examined very closely; they were but faintly indicated in the landscape, as many of the stones had sunk in the ground.

Tent-ring 353 was compactly built (fig. 2). In its western part a row of stones 1 M. long cut off a small space, up to 0·55 M. broad.

[1] Cf. Ryder: pp. 289—290.

From this row of stones to the east wall, the distance was 1·15 M.; from the doorway, which was 0·25 M. broad and faced the south, there was a distance of 1·25 M. to the back wall.

Near the southernmost tent-ring (355) lay a circular, temporary meat-store (356), 1 M. in diameter, built of large stones.

A trap (357) (fig. 7), not very conspicuous, stood ca. 20 meters S. S. E. of the tent-ring 355. It was badly built, partly of small stones, and was 0·70 M. long, 0·15 M. broad and 0·15 M. high; the opening faced the south; the falling door had been displaced.

Near the trap to the north was a fine, square, permanent meat-depot (358), 0·50 M. along the side and 0·40 M. high.

Head of Stormbugt (lat. 76° 49', long. 19° 09'). Here we found 1 tent-ring, 1 shelter, 1 trap and 4 permanent meat-depots.

As the head of Stormbugt is regarded the stretch of Winges Kyst between Stormelv and Stormnæs (see Chart, Pl. V). The fairway along the greater part of this stretch of coast is very bad and filled with shallows and reefs. The reefs and off Stormelv are a resort for a number of walrus and large seals in the summertime. We know also from experience, that smaller seals may likewise come here; probably they are not present at the same time as the walrus, as the latter prey upon them, a fact known partly from the statements of our Greenland companions, partly from the observations of the expedition. We may believe, therefore, that the Eskimos have not had the opportunity to hunt both kinds of animals contemporaneously at the same locality.

The land along the coast is formed of many cliffs, but only of small height. Within the coast-line lie plains and bogs with great quantities of birds; in this region the sledge-party of KOLDEWEY-PAYER shot musk-ox in 1870[1]. The members of the Danmark Expedition shot musk-ox some few kilometers further to the west.

On the beach below Stormkap we found 2 large, oval permanent meat-depots, at a distance of 18 meters from one another. Very large stones had especially been used in their construction and we may believe that they were intended for walrus-flesh. The south one (359) was specially well-built, 1·20 M. long, 0·90 M. broad and 0·24 M. high; the north one (360), in which several stones were wanting, was 1·30 M. long, 0·90 M. broad and 0·24 M. high.

On the coastal ridge between Stormkap and Stormnæs we found a trap (361) built of large and small stones, 0·60 M. long, 0·17 M. broad and 0·17 M. high. The opening faced the south; the falling door was displaced.

[1] KOLDEWEY: I, p. 493.

A shelter (362) lay ca. 15 meters S. E. of the trap. It was constructed of large stones, 1·25 M. long, 1·00 M. broad and open towards the south.

In the bay east of Stormnæs we found a tent-ring (363) ca. 20 meters from the beach and ca. 4 meters above the sea. The edge of the platform lay in the direction east—west and was 3·80 M. long; from this to the north wall the distance was 1·90 M., to the south wall 2·50 M. Large stones had been used for the tent and flat stones for the platform edge. No doorway was found. From about the middle of the edge of the platform a row of stones led in a southerly direction towards the circumference of the ring and divided the floorplace into 2 parts. (Musk-ox).

About 50 meters W. N. W. of the tent-ring, on a small cliff, we found 2 permanent meat-depots (364) at a distance of 10 meters from one another. They were 0·50 M. in all directions and were laid with flat stones over the whole floorplace.

Rocky islets in Stormbugt. Here we found 4 tent-rings, 4 shelters, traps, and temporary meat-stores.

These rocky islets lie near to and off the coastal stretch just mentioned. They are quite small in extent, low and somewhat mound-like.

On an islet, to which access was only obtained through a steep cleft on its one side, we found several temporary meat-stores (365) and traps (366), right up on the top.

In the middle of a second islet, 11 M. high, we found 4 tent-rings and 4 shelters in two parallel rows. The three tent-rings furthest west (in series from north to south: 367, 368, 369) were probably the oldest I have found, at least they had suffered most from wind and weather. In the first instance they were hardly noticed, and it was only when the best preserved one had been discovered that the others were quickly found.

The fourth tent-ring lay furthest to the south (370), in line with 3 shelters (from south to north 371, 372, 373). The fourth shelter (374) lay halfway between the two rows.

Measurements of the tent-rings are given in the table p. 274.

One of the shelters was not measured (371). A second (372) was triangular, 1·45 M. along the side. Shelter 373 was 1·70 M. long and 1·35 M. broad.

The fourth shelter (374) had a platform-place, with the edge 1·25 M. long in the direction east—west; from this to the north wall the distance was 0·65 M.; this part of the floorplace was covered with fine gravel.

No.	Form	Length of platform edge in E. – W.	Distance from north wall to platform edge	Distance between the 2 rows of stones of platform edge	Distance from south wall to platform edge	Remarks
367	—	—	0 85	0·40	2·40	No doorway. Double platform edge. Platform edge stones thin and standing on end. Space between the 2 rows filled with tufts of grass; at a few places a separate space formed by flat stones.
368	oval	2·40	1·30	0·60	1·30	
369	oval	2·25	1·70	0·45	1·30	
370	circ.	3·50	1·50	—	2·00	Old. No doorway. (Platform edge single).

Highest up on the islet the ground consisted of ordinary beach-gravel, a little large in the grain perhaps, but still suitable for building the tents. The ground must certainly have been somewhat level at an earlier date, where the tent-rings now stand, but in the course of time it has become so altered, that one would never think of looking for tent-rings at such a place without special reason. Some of them were cut through by furrows down to 0·75 M. deep. If these were caused by melting water from the snows, a very long time must have been taken for their formation, as there cannot be very much snow on such a small islet, where the top in normal years is free of snow and even after the snowy winter of 1907—08 was only partly covered. It seems almost impossible that the melting snow could have made these furrows, nor have I ever seen anything like them even at places where the tent-rings are situated right under the snow-slopes, from which each year a stream of water from the melting snow flows down over the tent ground; perhaps the cause is to be found rather in the splitting of the rocky ground under the gravel due to frost. — Whatever the cause, the furrows must have been produced after the Eskimos had placed their tents there.

I could not find any meat-stores, though several heaps of stones might have been taken for such, but they were in such disorder and so scattered, that I was unable or would not venture to say, whether they were due to chance or collected by human beings for a definite purpose.

The passage round the islet contained so many submerged reefs, that it is impossible to believe that the islet has been occupied at the time of year when the water was open.

On a third islet, Terneskæret, we found several temporary meat-stores (375).

Stormnæs (lat. 76° 48′, long. 19° 12′). Here we found tent-rings, shelters, 4 traps, permanent meat-depots, temporary meat-stores and 2 fire-places.

Stormnæs is a broad, stony point, which projects out towards the south in Stormbugt. It is connected by a low tongue with the remaining part of Winges Kyst. A large pool contains good fresh-water.

Regarding this tenting ground MYLIUS-ERICHSEN writes in his diary.

"$^{13}/_{9}$ 06. Stormnæs. A fox-trap[1] 0·80 M. long, 0·18 M. broad and 0·13 M. high, with flat end-stone of hornblende, $1^{1}/_{4}$ cm thick; hindmost covering stone removed. A second[2] 0·63 M. long, 0·15 M. broad and 0·16 M. high. Both lay on flat, rocky ground; in the last-mentioned trap the end-stone had been moved. A "wolf-trap"[3], 0·98 M. long, 0·28 M. broad and 0·33 M. high was found on solid, gravelly ground, with a solid edge of rock as the one wall and very heavy stones as roof and walls. The end-stone was 3 cm thick. — All 3 traps at summer tenting grounds with meat-depots[4] — where none live in the winter, but to which the attraction is the smell of the inaccessible meat (heavy stone-depots) — but only the meat in the traps can be got at.

The Eskimos must have clothed themselves in fox-skin pelts.

Tent-ring[5]: almost circular; diameter 2·50 M., with stone heap[6] for meat near by (containing bones of animals) as also 2 small heaps of stones for cooking place.[7]

A meat-store[8] $1^{1}/_{2}$ M. in diameter (circular)."

When I myself wished to continue the investigations later, I was summoned away owing to the departure of the Expedition.

A number of tent-rings (383) were found on the Naze and also many shelters (384), permanent meat-depots (385) and temporary meat-stores (386).

In the centre of the Naze, ca. 100 meters from the south shore, lay a very large, loose stone-boulder, ca. 10 meters above the sea. A wall of many large, flat stones had been built up against the south side of this, whereby an almost oval space (387) had been formed, which had been 1·90 M. long and 1·25 M. broad. Regarding the height of the space, I could form no certain impression, as the wall was much broken down. I believe, however, that it has been ca. 1 M. high. The west wall especially had been built up. Close to the east was an oval, temporary meat-store (388), 2·50 M. long and 1·90 M. broad, formed of large stones.

On a specially built base behind these remains we found a trap (389), 0·60 M. long, 0·16 M. broad and 0·16 M. high. The door opening faced the west; the falling door had been displaced.

[1] (376) Opening towards the east. [2] (377) Opening towards the west. [3] (378) Opening towards the south. [4] (385). [5] (379). [6] (380). [7] (381). [8] (382).

Furthest to the west on the Naze we measured a shelter (390) which was built of very heavy stones up to a height of 0·50 M. It was oval, 1·25 M. long. The door opening faced the south and was 1 M. broad.

A second shelter (391) was found near the beach, on the north side of a solid, rocky wall 0·60 M. high, which thus formed the south wall of the shelter for 1·75 M. The north wall was built up of many stones to a height of 0·40 M. The east wall was built in a similar way, and was 1·00 M. long, 0·55 M. high. The west wall on the other hand consisted of a couple of stones; and the door opening has probably been here.

Bones were found everywhere on the Naze. (Bean-goose, fjord seal, reindeer, musk-ox).

Snenæs (lat. 76° 49′, long. 19° 21′). Here we found 13 winter-houses, 8 tent-rings, 2 shelters, 13 traps, permanent meat-depots and temporary meat-stores, 3 graves and 2 stone structures made by children.

As the name indicates, this point is covered with snow. Its eastern part however is free of snow and here there is a settlement. A small pool of freshwater gives good drinking water in the summer and excellent, dense ice for melting in the winter.

The route landwards from the settlement towards the west is difficult, but towards the east and north the land lies open, with alternating stretches of stone, gravel and bog, and has probably been a good hunting ground. Walrus occur in the summer in the open channels of the land-ice and many seals are seen on the ice in spring over the whole wide expanse of the bay.

The winter-houses lie in 3 groups, the one 23 meters above the sea, just above an old shore-line, the two others nearer the present line. For the size and form of the houses see Pl. II.

Behind the winter-houses lies a burial place and east of this a naze or coastal stretch with traps.

There are 2 winter-houses in the uppermost group, as also 1 tent-ring, 1 temporary meat-store and 2 stone spaces.

Winter-house 392 was much broken down, but the stones lay quite loosely. The roof had fallen. The platform was formed of gravel, paved with flat stones. We made no discoveries unfortunately in our examination of the house; it seemed to be completely empty. I measured this winter-house both before and after digging it out, in order to see how great the error might be on measuring a house before excavation, and I give the results in the following table.

Winter-house 392	Length from flat stone over doorway to back wall	Greatest breadth	Length of passage	Breadth of passage
Before excavation	2·08	2·42	2·50	0·42
After excavation	2·20	2·20	2·00	0·40

Winter-house 393 was found 3 meters west of 392 and was almost of the same size as this; it was so much broken down that I did not endeavour to measure it. Close up to the east wall was seen an open, four-sided, stone space (394) which lay under the surface — certainly a permanent meat-depot. It was 0·47 M. along the side and 0·32 M. deep. Round stones lay scattered over the bottom so that their upper edge formed a kind of paving.

A similar space (395) was found ca. 45 meters N. N. E. of the winter-house 392. It was 1·25 M. long, 0·60 M. broad, 0·40 M. deep, open and full of sand.

This is the only place in these latitudes, where the permanent meat-depots at the winter-houses lie below the ground. I believe that these meat-depots have at one time stood free above the ground; but in course of time, owing to refuse from the houses or blood etc. from the depots themselves, vegetation has grown up and thus raised the level round about. This occurs more often in the southerly parts of Greenland, where the vegetation is much richer.

The tent-ring (396) was found ca. 15 meters S. E. of the winter-houses. It was circular, 2·42 M. in diameter, formed of ordinary stones, which now lay 8 to 10 cm. below the ground. The door opening faced the south and was 0·67 M. broad. East of the doorway a row of stones (a large and a small stone), 0·70 M. long, led outwards. There was no special platform. The ring lay ca. 10 meters from the old shore-line, which was very distinctly marked and along it bone remains were found. The bones lay especially near the tent-ring and right down from the winter-houses. (Hare, bearded seal, fjord seal).

A broken-up, temporary meat-store (397) was found ca. 10 meters S. E. of the tent-ring.

There was a considerable amount of vegetation in a hollow behind the winter-houses. There has probably been a small freshwater pool here earlier; later it has turned into a bog and is now overgrown with moss, with a little heather and willow.

In the central group were 5 winter-houses, which were all very old and sunken, so much so that it was even very difficult to see them at all. They were in part situated on the south bank of the freshwater pool.

Winter-house 398 lay furthest to the east. The roof had fallen in and above the platform we found a quantity of frozen whale-bone, but no weapons or utensils; the examination however was somewhat hasty. (Fjord seal, bones of the Greenland whale and a piece of large whale-bone).

The winter-houses 399, 400 and 401 (fig. 37), were built close together and lay 8 meters west of the above-mentioned winter-house along the bank of the freshwater pool. Winter-house 402 was found 20 meters S. S. E. of the winter-house 401.

The 4 houses last mentioned were not investigated.

In the lowermost group there were 6 winter-houses; 4 of these were much sunken and old, the other 2 however of newer date. The winter-houses of this group were mainly situated 10 to 20 meters from the steep shore.

Winter-house 403 lay 25 meters south of the house 402 in the middle group; just to the east of it lay winter-house 404 which was more in ruins than 403. Winter-house 405 was found 25 meters further east. The passage here was not so much broken down as in the two houses mentioned.

The winter-houses 406, 407 and 408 were found furthest east on the Naze, lying close together in the direction east to west; the last was further east, was much broken down and not examined; the other two were investigated.

From MYLIUS-ERICHSEN's diary:

"$^{11}/_{9}$ 06 — — saw 2 Eskimo houses".

These two winter-houses (406 and 407) were first measured and examined by MYLIUS-ERICHSEN; later my brother and I myself had the opportunity of working a little at them, but the examination was far from exhaustive especially in the eastern house. In both houses we found human bones; both these and the many fine things we found, indicate that the natives must have died here. In the western house (406) we made a large discovery especially of ornaments and weapon points, for example, a large number of slate points collected together for the most part on a small wooden tray; both the lamp and pieces of cooking utensils were found.

In MYLIUS-ERICHSEN's diary we find:

"$^{12}/_{9}$ 06. — — At Snenæs I dug out a ruin; splendid discovery of arrows and lower jaw of a human being — —."

In the eastern house (407) the things were certainly far fewer in number, because we worked less in it, but among them some fine knives of slate, which were certainly not left behind intentionally.

Winter-house 406 had two small annexes (Pl. II) at the front wall, which were mostly filled up with remains of bones. The

platform was constructed of gravel; on the floorplace there were flat stones and the bottom of the passage lay lower than the floor. Above the innermost, flat, covering stone of the passage there was a recess with a triangular opening in towards the house. The measurements of the opening were: along the base 0·37 M.; the sides 0·32 and 0·24 M. (Ptarmigan, hare, dog, bearded seal, fjord seal, reindeer, musk-ox (skull with horns)).

In the winter-house 407 the platform was also of gravel. In the front wall there was a similar recess, but rectangular, 0·40 M.

Fig. 37. Winter-house 401. Snenæs.
Seen from the south. The presence of the house is only indicated by the overgrown circle in the middle of the picture. The winter-houses 392 and 393 lay above the highest snow-slope seen to the right of the picture. (Photo. by the author).

broad, 0·27 M. high and 0·30 M. deep. The passage was 0.50 M. high and not much broken down; the bottom lay lower than the floor of the house. (Feathers of large bird, hare, dog, walrus, fjord seal, reindeer (including several antlers), ribs of a small whale, narwhal).

Wood has certainly been used in the construction of the roof in both houses. Outside the houses many antlers of deer were found, some of which had been cast naturally.

Further west on the Naze than the winter-houses, and around these, we found other stone remains, namely, 7 tent-rings, 2 shelters, many meat-stores and 2 structures of stone built by children.

Tent-ring 409 was found furthest to the west on the shore,

which is here 2 to 3 meters high and steep. This ring was rectangular, formed of 2—3 large stones with the rest of ordinary size. The floorplace was everywhere paved with flat stones. There was no doorway. The ring was 1·70 M. long in east to west direction and 1·00 M. broad.

Details of the other tent-rings are given in the table p. 281.

Shelter 416 was found 30 meters west of the winter-house 403 and was built of 10 large stones, from 0·20 to 0·70 M. high, some of which were fixed in the ground, and of some smaller stones. The shelter had two spaces,' 2·00 M. long and 1·00 M. broad, with the openings facing S. S. W. The central support was a stone 0·45 M. high.

A shelter made by children (417) was found close to the east of the large shelter. It was built of small stones, rectangular, with the openings towards the south. It was 1·25 M. long from north to south, 1·00 M. broad and was divided longways by a row of stones.

The second shelter (418) lay 15 meters N. E. of the shelter model and was constructed of large, compactly built stones, 0·40 M. high, on the south side of a permanent meat-depot. The shelter was 1·25 M. long and had an opening 0·60 M. broad towards the east. The permanent meat-depot (419) was semicircular, built of large stones up against the east side of a large stone boulder. The depot was 0·40 M. high, the radius of the ground-plan 0·30 M.

Quite to the east on the Naze we found a very small ring of stones (420) which appeared to have been made by children (cf. fig. 13). It was built of ordinary rounded stones.

Close to the steep southern slope of the Naze we also found many permanent meat-depots and temporary meat-stores (421) and remains of bones were scattered everywhere about the settlement. (Hare, polar bear, walrus, bearded seal, fjord seal, reindeer (including many antlers), musk-ox).

Along the east shore of Snenæs I found a human underjaw a little way above highwater mark, only 30—40 meters north of the winter-houses 406 and 407.

The burial place was situated about half a kilometer N. E. of the winter-houses 406 and 407, 20—30 meters above the sea (Pl. V), on an evenly rising slope. Here there were 3 graves and 4 traps. The graves were built on or near projecting rocks, quite close to natural heaps of large stones, which has saved a long transport of the heavy building materials. On the burial place we found walrus bones, which have probably been dragged up here by dogs or foxes.

The uppermost grave (422; fig. 38) lay 27 meters above the sea.

No.	Distance and	Direction from	No.	Form	Diameter	Platform edge		Distance from platform edge to		Breadth of doorway	Doorway towards	Bones found	Remarks
						Length	Direction	Back wall	Doorway				
410	65	E.	409	pear-shaped	—	2·70	E.—W.	1·00	1·50	0·60	S.	Fjord seal	The western part formed of ordinary stones, the eastern part of large, platform edge of flat stones.
411	7	E.	410	circ.	2·70	—	—	—	—	0·70	S.	Fjord seal	
412	30	E.	411	circ.	3·60	3·60	N.—S.	1·80	1·80	—	—	Walrus	No doorway.
413	7	E.	412	circ.	3·00	—	—	—	—	0·70	S.W.	Fjord seal	
414	close	N.E.	404	oval	—	3·60	E.—W.	1·90	1·90	0·60	S.	—	Of ordinary stones; floorplace much overgrown. From platform 2 rows of stones led to doorway. The western row continued 0·60 M. outside the ring.
415	10	N.E.	414	oval	—	4·80	E.—W.	1·90	1·90	0·60	S.	Fjord seal	Ordinary stones; a stone in middle of doorway. Floor has been beach-gravel, now covered with 8—10 cm. of earth with strong growth of vegetation.

Its longest axis lay north-south; even the inside of the grave was well built up with large stones, and the bottom was paved

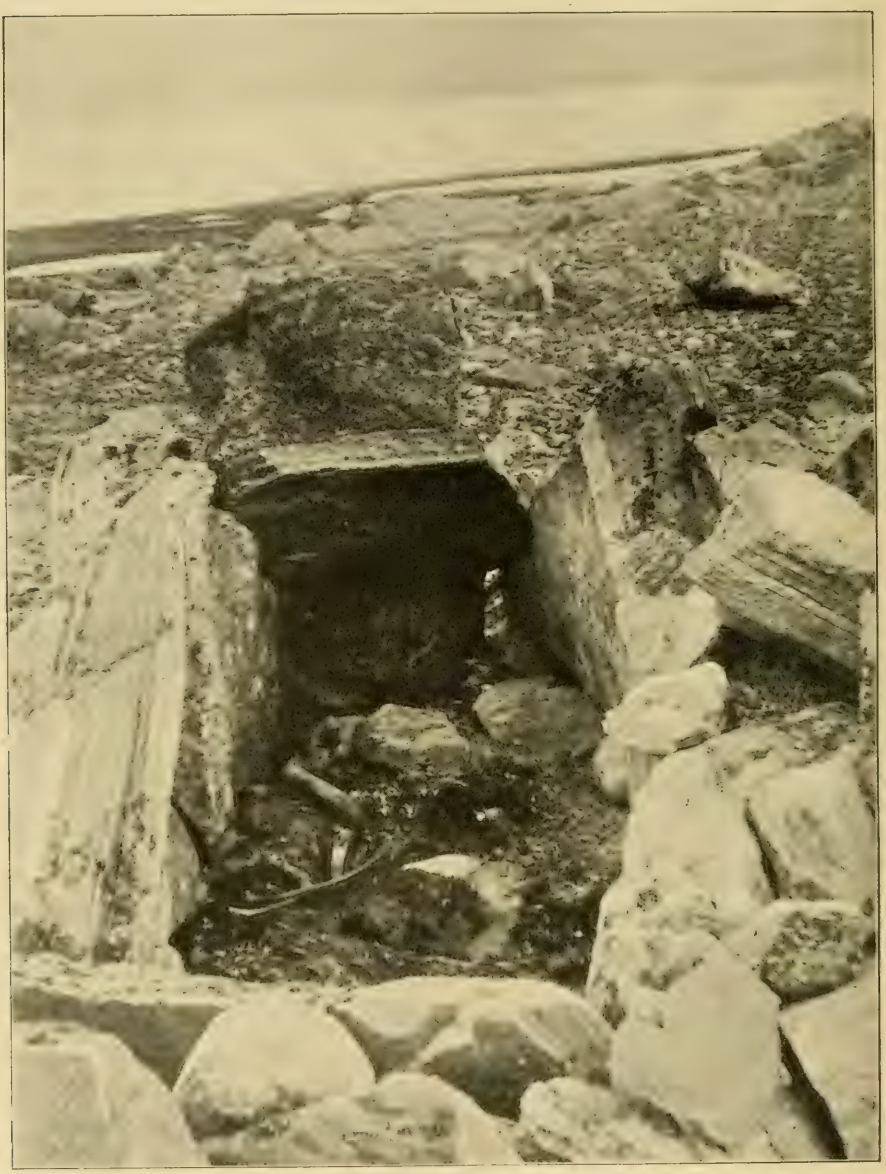


Fig. 38. Grave 422. Snenæs.
Seen from the north. The grave is open and the skull has been removed. (Photo. by the author).

with round stones, the whole grave being an excellent example of the Eskimos' building art. Externally it was ca. 2·50 M. long, ca. 1·85 M. broad and ca. 1 M. high. The internal measurements were: western long wall 1·59 M., eastern 1·37 M.; the breadth at the north

end 0·43 M., at the south end 0·54 M.; the height at the north end 0·40 M., at the south end 0·60 M.; here a large, flat stone was inclined in over the grave. The heavy stones, which have been laid over the grave in two layers, were 0·15—0·20 M. thick. The grave was quite half-filled with a mixture of earth, sand and gravel. The body seems to have been buried in a sitting position with the face towards the south. The skull had rolled down to the south end of the grave, where the pelvis also lay. The femora lay on the south of the middle of the grave, the ribs on the north, and the vertebral column between the middle and the north end. In the

Fig. 39. Grave 423. Snenæs.
Seen from the west; before opening. (Photo. by the author).

north end of the grave, east of the vertebral column lay some teeth from the skull and two pieces of weapons.

The grave articles had not been placed in a receptacle, but were found outside the grave, close along its east side just under the surface. They consisted of a slate knife, 3 slender weapon points of bone, 1 harpoon point and a harpoon point in miniature.

Grave 423 (fig. 39) was found ca. 20 meters S. S. E. of the above and 25 meters above the sea. Its long axis lay north-south and several large stones, though not so large as in grave 422, had been used in its construction. The grave was also solidly built on rocky ground, but yet could not be compared with the other. Externally

it was 2·27 M. long, 1·50 M. broad and 0·80 M. high. Internally the western long wall was 1·00 M., the eastern 1·22 M.; the breadth at the north end 0·58 M., at the south end 0·62 M.; the height was 0·60 M. The skeletal parts were laid in a mixture of earth, sand and gravel.

The grave articles were found just under the surface along the east side of the grave, and consisted of a fine, slender knife of slate and 3 miniature weapons.

Grave 424 was found 20 meters to the south of grave 423, ca. 20 M. above the sea, and was much more slender than the other two. It was however well built and stood on rocky ground. Its external measurements were 1·85 by 1·25 with the long axis from north to south. Internally the space was 0·65 M. long in the direction from north to south, 0·32 M. broad and 0·37 M. high. The skeleton lay in a mixture of earth, sand and gravel. No grave articles were found.

Near the graves lay the traps, obviously placed there owing to the attraction of the graves for the foxes. The measurements of the traps were as follows:

No.	Distance and	Direction from	No.	Length	Breadth	Height	Doorway towards	Falling door		Pointed stone	Remarks
								Thickness	Position		
425	20	N. N. W.	422	0·72	0·12	0·15	S. E.	0·02	pres.	pres.	Hindmost covering stones removed. Traps stood on flat places, between large and small stones and were not very conspicuous though solidly built.
426	8	N. W.	425	0·72	0·13	0·20	S. E.	0·02	pres.	pres.	
427	—	—	—	0·64	0·14	0·21	S.	0·02	at side	pres.	On a small rocky knoll between grave 424 and settlement; fairly conspicuous.
428	125	W. S. W.	422	0·69	0·13	0·21	—	quite thin	at side	—	Between large stone boulders. Above the trap a conspicuous white stone (cf. p. 197). Hindmost covering stones removed.

On the small hillocks N. W. of the burial place, according to information received from Mr. WEINSCHENCK, were 2 traps (429), which I had not the opportunity to visit.

To the east the burial place bounds a flat boggy plain and east of this again the ground is old sea-bottom, strewn over with stone boulders. Among these we found 7 traps:

No.	Length	Breadth	Height	Doorway towards	Remarks
430	0·62	0·12	0·13	S.	Lay ca. 500 meters east of the graves, 6 meters above the sea, ca. 350 meters from south beach. Built of ordinary stones on an old shore-line. Partly fallen in and quite full of ice $^{29}/_{5}$ 1908. Falling door in place.
431	0·62	0·18	0·15	S. W.	Very old trap, ca. 150 meters east of 430, on very bare beach-ground. Quite fallen down and full of earth.
432	0·62	0·10	0·18	S. S. W.	Close east of 431. 12 meters above the sea and 350 meters from south shore.
433	0·74	0·12	0·14	S. S. E.	Built on beach gravel, ca. 50 meters from east shore, 6 meters above the sea just above a slope.
434	0·64	0·16	0·17	S. E.	On the south shore, 4 meters above the sea, ca. 40 meters west of a cairn built by the Expedition. Trap built of ordinary stones.
435	0·54	0·13	0·10	N.	West of trap 434, 10 meters from south shore, 3 meters above the sea. Falling door and the hindmost covering stones removed.
436	0·70	0·12	0·20	S.	West of trap 435, 10 meters from south shore, 4 meters above the sea. Falling door in place. Hindmost covering stones removed. Locking stones heavy. Considerably more recent than the others here.

Trap 432 lay quite open. It was very old and the side walls were not formed, as in more recent traps, of single, long stones but of many small, and these were not edged but rounded stones. The whole seemed to me a very primitive means of capture. The falling door was a small triangular plate of granite, which stood in its place with its point upwards. All the stones were sunk several cm. into the ground.

Trap 433 was also of older construction and was in part broken down. To obtain a good bottom for the trap, so that the animal captured should not be able to dig its way out through the loose gravel, the bottom had been paved with flat stones before the trap was built; the long walls and the back wall were built on this base.

North-East coast of Farsund. The land here has been but little investigated in ethnographical regards. We found 1 trap.

From Snenæs a ridge leads towards the north, and though its western slope at the southernmost end has no real, low-lying shore, there is room for a couple of small points which afford good tenting ground. On this stretch however we found no building remains.

In the sound between Nordre Orienteringsø and the land north of Snenæs, Farsund, there is a strong current in the summer-time — especially at ebb-tide.

Halfway between Snenæs and Lille Snenæs I observed a trap (437) on a small ridge near the shore, whilst sledging past the place.

Lumskebugten (lat. 76° 55′; long. 19° 49′). Here we found 12 shelters, 1 permanent meat-depot and 1 temporary meat-store.

Along the coast almost halfway between Snenæs and Hvalrosodden lies Lille Snenæs, an outrunner from the high land; this bounds Lumskebugten towards the S. E. Several rivers run out into this bay and on the sandbanks off these rivers I have seen the walrus resting to feed, when they came from the sea-ice into the inner waters in the first half of July. Towards the north Lumskebugten is bounded by a very low shore several kilometers broad, which is a barren waste. In the land behind Lumskebugten there has earlier been many musk-ox and reindeer; at the present time a few musk-ox occur in addition to the usual animals in these regions.

In Lumskebugten two rivers have their outlets ca. 3 to 4 kilometers north of Lille Snenæs and here we found the 11 shelters, the meat-depot and the meat-store, situated mostly to the north of the outlets. The shelters consisted usually of compactly placed stones and were in most cases quite finely built. Many reindeer antlers were found at the shelters. South of the rivers and between the two outlets the shelters lay ca. 50 meters from the beach and ca. 5 meters above the sea, but on the north side they were higher up as the shore here has a steep slope.

The form and size of the shelters is shown on Pl. III, to which I may add the following remarks.

Shelter 438 lay between the two rivers ca. 50 meters from the beach and ca. 4 meters above the sea. Both the walls and the platform edge were composed of a neat, compact row of stones, some of which stood on end, some on the flat in layers. The wall in the south corner of the shelter was 0·35 M. high. (Fjord seal).

Shelter 439 lay ca. 20 meters north of shelter 438. It was not so well built, but yet a fine one. The south corner was highest ca. 0.50 M.

Shelter 440 was found north of the northern river, ca. 50 meters W. of the shelter 439. It was constructed of ordinary stones, but these lay singly with interspaces, only at a few places in a compact row. To the right inside the doorway were 3 stones, possibly the lamp place. Close to the north of the shelter skull bones of walrus were found with the teeth taken out.

Shelter 441 lay ca. 50 meters north of shelter 440. It was circular, 2 M. in diameter and built up against a large stone boulder.

The doorway looked towards the west and was 0·60 M. broad. Bones of seal were found near the shelter. A permanent meat-depot (442) was found 4 meters S. S. E. of the shelter. It was built of uniformly large, compactly placed stones, but was open. It was 0·50 M. in the three directions. Both the shelter and the depot were covered with sand.

Shelter 443 was found 5 meters east of shelter 441. It was double and was finely built. The stones in the back wall were placed close together on end, 0·40 M. high; the other stones were placed with interspaces. As is shown in Pl. III the platform edge consisted of 2 rows of flat stones, and along the whole of the south wall there was a kind of side-platform, also of flat stones; the ground on the remaining part of the platform had been well levelled.

Shelter 444 was built on sandy ground up against a large rock ca. 0·60 M. high, about 20 meters north of shelter 443. Otherwise it was constructed of ordinary, separate stones, and of flat platform-edge stones. The platform was level and solid.

Shelter 445 was found 8 meters north of shelter 444; ca. 100 meters further north lay:

Shelter 446, ca. 20 meters from the beach and ca. 10 meters above the sea. It was constructed of a compactly built row of ordinary stones 0·35 M. high. In its N. W. corner was a heap of stones and bones, separated from the remaining space by a row of stones.

A circular, temporary meat-store (447), 0·50 M. in diameter, was found ca. 20 meters south of the shelter.

Shelter 448 was found ca. 75 meters north of shelter 446, ca. 75 M. from the beach and ca. 20 meters above the sea. This shelter must rather be regarded as a curved screen, behind which the Eskimos had lain for shelter against the N. W. wind. The land goes evenly up from the beach, now and then forming a small gravelly ridge, and it has been such a ridge heightened by the stones, which has formed the shelter. The lying place was now covered by a dense, warm carpet of heather. The whole of the screen was 0·60 M. high and easily distinguished in the landscape.

Shelter 449 was found south of the mouths of the two rivers, 10 meters south of shelter 439. It was formed of a single, compact row of ordinary stones; the ground was overgrown with heather.

Shelter 450 lay ca. 100 meters south of shelter 438. It was built of separate, ordinary stones on ground of clay. The shelter was old.

The twelfth shelter 451 was situated on the north side of Lille Snenæs, much further south than the others. It lay on the east

side of a large, loose stone-boulder and was oval, 2·50 M. long and 1·25 M. broad; the opening faced the N. E. and was 0·50 M. broad.

Bastionerne (lat. 76° 56′, long. 20° 11′). Regarding what was found at this place (452; fig. 40) MYLIUS-ERICHSEN writes in his diary:

"Eskimo stone structure: Breadth of interior 0·97 M., length of interior 1·30 M., height of largest stone 0·30 M., 9 stones in all — not more than an inch or two[1] sunk into the ground; fitting very exactly together. Lay on a middle moraine — an uneven gravelly ridge of up to 100 feet[2] in height, in the middle of a clay and gravel plain on the north side of the large Salmon River[3], facing the south with view over the river.

Fig. 40. Shelter 452. Bastionerne.
This stone structure was the first of its kind the Expedition had met with; it was found by MYLIUS-ERICHSEN who called it "shelter" or "hunting shelter". (Photo. by HAKON JARNER).

Probably a shelter for a reindeer hunter and salmon fisherman.

The stones slightly overgrown (the red and the black lichen) gneiss stones of the moraine, which consisted of gravel and pebbles.

I tried to lie in it and could easily lie there with bent knees — an Eskimo naturally much better; then he covered himself with a pelt — just as the natives of Kap York do on their search for birds' eggs and the eider duck on Dalrymple Rock".

[1] 3—5 cm. [2] Greatest height of the gravel ridge 27 meters above the sea. [3] Lakse-elven.

Mouth of Lakseelven (lat. 76° 55′, long. 20° 10′). On the high bluff west of the mouth of Lakseelven we found 2 tent-rings, 1 shelter and a stone structure made by children.

From the tenting ground there is a very wide view over Dove Bugt north of Orienteringsøerne, but it is only at Hvalrosodden which lies somewhat more to the south that one can land with the sledge or kayak. When the rivers begin to flow in the spring a large basin of open water is formed off the mouth of Lakseelven, and here we find the first arrivals of the walrus and sea-birds. This open basin is formed long before the ice of the bay breaks up, and in summers when this does not occur, the water of the river spreads many kilometers out over the bay, so that the seals cannot crawl up and the ice is impassable for sledging, and boating is difficult. In good summers, when the ice breaks up, we can calculate upon a fairly rapid disappearance of the bay-ice after the river has begun to flow.

In 1908 I had the opportunity of being at the place when the river broke through and brought Sælsøen in connection with Dove Bugt.

Regarding this my diary contains the following remarks.

"5th July 1908. — It is still cold at nights and there is ice in the pools in the morning. In the daytime the midges begin to be troublesome. The butterflies, humble bees and many other insects are also becoming more numerous and the whortleberry is in flower. The Greenland heather, with flowers like those of the lily of the valley, the poppies, the red and the yellow lousewort and a number of other beautiful arctic flowers are now in full blossom. The snow-sparrows are now feeding their young and the skua gull's 1 to 2 eggs are found everywhere. On the ice one or two seals are seen, but they are shy and difficult to approach. Foxes and hares steal past wherever one goes on land. The ptarmigan have begun to change colour and the small wading birds do all they can to lure one away from their lairs. The small brooks have decreased in volume, as the snow-fields which fed them are greatly reduced. On the other hand, the small rivers have increased surprisingly. Under the snow cover of Lakseelven the river water is forcing its way down to Dove Bugt and in a few days probably the river will be free. For the time being water flows from the bed of the river to Sælsøen, but it must come from the snow. Our salmon net has been set out, but we have got nothing as yet. — —

7th July 1908. — — Lakseelven has begun to flow and the lake is now connected with the sea. Beautiful salmon — males and ripe females — are now migrating from the salt water up into the lake, but must first pass our net and we catch many in spite of the poor quality of the net. On the ice of the bay, off the mouth of the river, the seals have collected in great numbers — they are also fishing for salmon. A few days ago there were no seals at this spot, but now many are here, sunning themselves near the open channels in the ice.

8th July. — — The melting of the ice on the lake and of the snow on the slopes has been so rapid, that the height of the water in the lake, even

though the river is running strongly, has risen 6 cm. in 24 hours. The temperature of the air at noon is 8° C. in the shade and 14° C. in the sun. — — The snow walls along the bed of the river come thundering down into the river which has undermined them and are carried onwards by the seething stream. — —

10th July. — — FREUCHEN went in the kayak from the lake, down the river, to Hvalrosodden. He had to carry the kayak over a fall in the river, but managed the journey very well. — —"

The above notes from my diary will give some notion of the conditions which existed at the time of year when this tenting ground must have been occupied, as presumably it has just been the quantity of seals, that congregate here at the mouth of the river, which has been the attraction for the hunters.

Regarding this locality MYLIUS-ERICHSEN writes in a letter to the Second-in-command as follows.

"$^{28}/_{9}$ 1906. — — The salmon are leaping in the river. — — Yesterday I found an Eskimo tent-ring[1] at the river, the occurrence of which shows that the fjord-complex round about here must be open in most years.

Regarding the Eskimo tent-ring: the position of the stones on the ground and the lichens on the stones show, that the age of the ring must be estimated to be at most 50 years.

We might therefore still meet with Eskimos on the North-East coast; but where? Nowhere better than here, a true Eldorado for nomads, an excellent place for food, all thinkable arctic animals on land and in the sea. — But alas, I shall probably not have the great good fortune to meet the most primitive children of the world on this journey — —"

The shelter (453) was rectangular with rounded back wall, constructed of ordinary stones 0·15—0·50 M. high; its long axis lay in the direction east-west; it was 1·30 M. long, 0·65 M. broad and opened towards the east. Across the opening — the whole breadth of the shelter — was a low, stone threshold.

Tent-ring 454 was found 5 meters south of the shelter. It was oval, constructed of large stones, 1·90 M. long and 1·25 M. broad. There was a smaller stone in the 0·40 M. broad opening, which faced towards the S. W. (Polar bear, musk-ox).

Tent-ring 455 lay 18 meters S. W. of the ring 454. This ring was semicircular, constructed of small stones. The straight front wall was 2·50 M. and from this to the rounded back wall the distance was 2·50 M. On the one side of the rounding there were 3 openings in the row of stones. Close to the tent-ring in the S. E. were some flat stones, as also a conspicuous, ordinary, round stone, which I imagine were used as playthings (456; cf. fig. 13).

[1] (454).

Beach west of Hvalrosodden (lat. 76° 56′, long. 20° 16′). Here we found 2 tent-rings, traps and 1 cairn.

This beach is low. The point itself is stony and sandy, but further to the west are stretches of vegetation. Seal and walrus are found in the bay. In August 1906 the Expedition found a collection of walrus on the extreme point. These animals — perhaps a score of them — lay and slept in the sun, and it was clear from their fearlessness and half-curious behaviour that they never before had seen human beings, at least as enemies and hunters.

On a small point ca. 2 kilometers west of Hvalrosodden we found the skull of a dog 10 meters from the shore.

A small cairn (457) stood ca. 100 meters north-west of the point. It was badly built, ca. 1 M. in cross-section on the ground and ca. 0·50 M. high.

A circular tent-ring (458) was found ca. 100 meters W. N. W. of the cairn, on overgrown beach-gravel, ca. 20 meters from the shore and ca. 3 meters above the sea. The tent-ring, which was built of ordinary stones, measured 3 M. in diameter and had a doorway 0·60 M. broad, which faced the shore in a W. S. W. direction. (Bean-goose).

A second tent-ring (459) of quite the same form, size and materials lay 2 meters west of 458; but the doorway here was 0·75 M. broad and faced the S. W. (Bean-goose).

North of the tent-rings, somewhat in on the land, were several traps (460), standing singly.

On a plain N. W. of the tent-rings we found a span of dog-harness.

Sælsøen (lat. 76° 58′, long. 20° 14′ and 20° 16′). Here we found 12 tent-rings, 1 shelter, 3 traps, 25 permanent meat-depots, 4 temporary meat-stores, 2 fire-places, 2 stone structures made by children, 10 stone ovals and many other stone remains.

This lake is many kilometers long, but very narrow; its outlet is Lakseelven, which may be regarded as the continuation of the lake to the S. E. At the outlet the lake is shallow and filled with large stones, and the river has but a slight depth at its upper end. The lake is surrounded by high land, but round the outlet there is tolerably flat country, and here we found some remains on the southern bank of the lake. The district has in earlier times been visited by reindeer and musk-ox, and here we have the only example in these regions of the Eskimos carrying on their hunting (and salmon fishing) by the lakes in on the land. Here, how-

ever, it was not reindeer hunting, as at other places, but mainly the musk-ox hunting, as is shown by the many bones we obtained. East of the lake there are small lakes and stretches of vegetation, and here the Expedition shot musk-ox, which were in herds, and we also saw and heard wolves and foxes here; many geese also occur.

In the lake there are many and large salmon and some of the members of the Expedition were of the opinion that they had seen seals in the lake (hence the name). I may remark here, however, that we — several experts — lived daily by the lake at the end of June and in the beginning of July 1908, without ever seeing any seal on the ice there, though at the same period we saw quantities of seal on the sea-ice in Dove Bugt. Driftwood was found on the north bank of the lake, and many fossil bones of whale on the south bank.

Near the lake we found 2 hunting grounds at a distance of ca. 2 kilometers from one another; the ground was very sandy and covered everywhere with large stone-boulders.

Many permanent meat-depots especially were found on the eastern hunting ground — just at the outlet of the river from the lake.

MYLIUS-ERICHSEN writes regarding this locality:

"At the outlet of the large river from the lake, southern bank: 12 stone heaps, some of which 2 feet[1] high and still surrounding a sandy space, certainly salmon depots.

Round about found a few, split reindeer bones and a piece of old whalebone — probably dragged here from where it was found near to the south bank of the lake.

Two tent-rings[2] so small that it looked as if the visits to this place had usually been short from house or tenting ground elsewhere while salmon fishing; the natives have thus built small tents[3] or slept in the open.

One tent-ring[4], round behind, straight in front, had the following dimensions: 2·00 M. broad, 1·90 M. from back to front.

In the stone heaps often a couple of hundred stones, some large, from which we may conclude that the depots have been intended to remain the whole winter.

The part of the lake down towards the river silting up with many large stones.

No salmon seen on 1/9 06, but several seen leaping 5 to 6 days before."

Among the stone remains at this hunting ground we found many bones (musk-ox). Further, bones of dog, fjord seal and reindeer (not many antlers) were found by MYLIUS-ERICHSEN. Details of the 11 permanent meat-depots are given in the following table.

[1] 0·63 meters. [2] (477—478). [3] Cf. LYON: p. 74. [4] (477).

No.	Distance and Direction from No.	Form	Length	Breadth	Height	Remarks
461	— — —	oval	0·60	0·50	0·40	Furthest west on hunting ground, ca. 25 meters from the lake and ca. 3 meters above this. Large stones. Open. Full of sand.
462[1]	10 E. by S. 461	oval	1·10	0·90	0·70	Extremely well preserved. Large stones. Comparatively small covering stones. Partly open. 0·20 M. of sand in bottom. (Hare, musk-ox).
463	3 E. by S. 462	circ.	0·60	0·60	0·40	Uniformly large stones. Open. Full of sand.
464	3 S. 477	oval	0·80	0·60	0·50	Ordinary stones. Full of sand.
465	8 W. by S. 464	oval	0·60	0·50	0·40	Partly full of sand.
466	2 S. S. W. 481	square	0·30	0·30	0·30	Ordinary stones Open. Full of sand.
467	close S. 466	oval	0·60	0·40	0·40	Somewhat disturbed. Not sanded. Possibly investigated by Mylius-Erichsen.
468	2 S. S. W. 467	oval	0·40	0·25	0·30	Ordinary and small stones. Open. Full of sand.
469	3 W. 468	oval	1·00	0·60	0·40	Ordinary stones (some removed). Full of sand.
470	40 N. E. 482	oval	1·00	0·50	0·40	In part built of large red stones. Broken down; full of sand. Outside some large, flat, red stones, possibly covering stones.
471	ca. 100 S. S. E. 462	oval	1·00	0·60	0·50	In part large stones. Full of sand.

Details regarding 4 temporary meat-stores:

No.	Distance and Direction from No.	Form	Length	Breadth	Height	Remarks
472	close S. 462	oval	0·50	0·30	0·30	
473	15 E. N. E. 463	oval	0·70	0·60	0·50	Ordinary stones. Broken down; full of sand. (Small fish bones, (lemming[2]), musk-ox).
474	close W. 477	oval	0·90	0·60	0·40	Large fixed and small stones. Full of sand. (Ribs).
475	1 E. 470	circ.	0·50	0·50	—	Small stones; broken down.

A large fire-place (476) was found 12 meters E. N. E. from the permanent meat-depot 462, near 2 large stones. It was open towards the E. S. E.; some charcoal was still at the bottom.

Two tent-rings were found, the one of which (477) was described by Mylius-Erichsen (above); it was situated 5 meters S. by W. of the permanent meat-depot 463. (Musk-ox).

[1] See further, description p. 294. [2] The occurrence of the lemming bones is certainly due to chance.

The second tent-ring (478) lay 3 meters N. N. W. of the permanent meat-depot 465. It was oval, built of ordinary stones, with a few large among them, 2·75 M. long and 2·00 M. broad. The platform edge was formed of flat stones and divided the tent-ring into two equally large parts. (Musk-ox).

Further, two ovals were found of large and ordinary stones. Some of the large stones used stood singly, others close together.

The one stone-oval (479) was found 2 meters S. of the permanent meat-depot 465, with the long axis east-west; it was 2·50 M. long and 2·20 M. broad. The west wall was ca. 0·20 M. high and the stones were very close together. The east wall was formed in part of a solid stone, ca. 1·50 M. long and ca. 0·50 M. high. Close to the stone-oval in the S. W. was a fire-place (480), ca. 0·40 M. square and open towards the east.

Stone-oval 481 lay 12 meters S. S. W. of 479; it was 2·75 M. long, 1·90 M. broad and with the long axis east—west. It was formed of uniformly large and ordinary stones, with a larger, fixed stone both in the east and in the west wall.

A single row of large stones (482), 2·50 M. long, was found 50 meters east of the stone-oval 481. It proceeded at right angles from the eastern end of a fixed stone-boulder, 2·00 M. long and ran towards the north.

As will be seen from the foregoing, it was almost only permanent meat-depots we found at this hunting-ground, and I was so fortunate as to discover one of them (462) undisturbed since the Eskimos had stored food in it. I may describe this discovery.

At the bottom of the depot a pavement of flat stones was first laid down. On these was placed the under part of the skull of a musk-ox (the 2 parts of the lower jaw), and round this a small space was formed by means of flat stones, at the sides placed on end. At the side and above these parts of the skull the flesh of the musk-ox (*Ovibos moschatus*, vertebrae and ribs of a young animal) was laid, divided into several layers by flat stones. The bones were still in order, vertebra by vertebra, rib by rib. Above the musk-ox meat lay a layer of hare (*Lepus variabilis*, shin-bone and shank), and then came a layer of flat stones and lastly, the heavy, true covering stones. We also found some fossil whale-bones in the depot.

There can be no doubt that the Eskimos have carried on the musk-ox hunting here on a large scale[1] — the enormous meat-depots indicate this. The fact that no traps were found here would seem to show, that the place has been occupied a part of the

[1] Cf. STEENSBY: p. 396.

winter[1], so long at least as the meat-depots were of any value. Such large supplies of meat, as are in question here, would — if by themselves — certainly attract the foxes[2] and such visits had either to be exploited or prevented. To make some use of them — to secure the unbidden guests by means of traps — has, as mentioned, not been attempted, whilst to keep the foxes away is only possible if the hunters remain constantly on the spot, in this case so long into the winter as the supplies of food would permit. I believe, therefore, that the stone-ovals 479 and 481 show the outlines of tents for winter use (see fig. 41); — grass-turf to help in the building could not be grown up here — and that the Eskimos have used such heavy tent-stones just in consideration of the winter storms, either to hold the tent-skin down or inside to keep it stiff. In such a case a snow wall has probably been built outside as quickly as possible, for the sake of extra warmth and protection. The supply of skins must have been sufficient here to procure the necessary warmth. No platform was seen; possibly many layers of skin were used instead.

The Eskimos have then only moved to the coast when their meat supplies ran out, or when the seal hunting or other circumstances made it desirable.

The western hunting-ground was found on a point, which like all its surroundings was old sea-bottom; gravel with pebbles and large boulders resting on clay. Further, fossilised pieces of whale skeleton were found scattered everywhere, either deep in the clay or loose on the gravel. At the outermost end of the point there is a steep gravel ridge, 1—2 meters high, descending sharply to the lake, the surface of which lies about 5 meters below the top of the ridge. To the east a steep slope leads down from the point to a low, sandy flat. West of the point several hollows run up from the lake and in these small pools have encouraged the growth of a considerable amount of vegetation in this otherwise barren country.

At this tenting-ground we found 8 tent-rings, 1 shelter (?), 3 traps, 14 permanent meat-depots and 8 stone-ovals.

The tent-rings were on the whole of considerable age. (See the table p. 297).

With regard to the 8 stone-ovals, details of which are given in the following table, reference may be made to the explanation of the stone-ovals found on the eastern hunting-ground (479 and 481).

[1] Cf. Greely: I, pp. 379—84; II, pp. 356—57; Steensby: pp. 264—65, 398—99.
[2] Cf. Steensby: 305.

No.	Distance and Direction from No.	Form	Length	Main axis	Breadth	Breadth of doorway	Doorway towards	Remarks
491	close S. 484	rectang.[1]	1·55	E.—W.	1·15	0·70	N.	Large stones. Ground even in bottom.
492	close E. 503	irreg.[1]	2·00	N. W. —S. E.	0·90 2·25	0·40	S.W.	Large stones, some fixed. Doorway very marked.
493	close E. 492	oval	2·80	E.—W.	2·50	0·40	N.	Large stones. West wall formed of a large, fixed stone, south wall of a compact row of stones. Threshold formed of 2 small stones.
494	1 S. 493	oval	2·00	N. W. —S. E.	1·30	0·50	S.	Large, compactly placed stones. In N.E. part of oval a compact row of stones cut off an oval space, 1·00 M. long and 0·50 M. broad.
495	2 E. 494	oval	2·00	N.—S.	1·70	0·40	S. E.	Large and ordinary stones, very compactly built. Double row of stones in south wall. (Fig. 41).
496	close S.W. 495	oval	2·80	N. W. —S. E.	2·30	—	—	In ruins. (Musk-ox).
497	close S. E. 502	square[1]	0·50	—	0·50	—	—	Possibly a shelter. A large stone, 0·58 M. in height, supported by smaller, formed the one wall; the stones in the other walls was 0·22 M. in height.
498	3 S. E. 497	four-sided[1]	3·40	N.—S.	1·50 2·50	0·50	N.	A cross-wall with 0·50 M. broad opening in the middle ran parallel to the south wall, 0·30 M. from this. North wall prolonged 1 M. to the east. (Musk ox).

A stone structure (499) close to the east of the stone-oval 494 consisted of two parallel, compactly built rows of ordinary stones, the one 1·90 M. long, the other 1·10 M. long, at a distance of 0·30 M. from each other. The one end was closed by a stone wall and between the rows was paved with flat stones; it was possibly a shelter.

The following table gives information regarding the 3 traps.

No.	Distance and Direction from No.	Length	Breadth	Height	Doorway towards	Falling door	Pointed stone	Remarks
500	close S. E. 493	0·65	0·22	0·18	W.	in place	—	Small stones.
501	close S. E. 496	0·62	0·19	0·23	S. S. E.	in place	in place	Long walls formed of a single stone on each side, sunk 2—3 cm. Falling door sunk 7 cm.
502	3 S. 512	0·60	0·17	0·17	E.	in place	—	

[1] The general term stone-oval is retained for these, though their form was not oval.

No.	Distance and	Direction from	No.	Form	Tent-ring		Platform edge		From platform edge to		Breadth of doorway	Doorway towards	Passage out from doorway	Remarks
					Length	Breadth	Length	Direction	Back wall	Doorway				
483	—	- -	—	oval	3·80	1·90	1·90	N.—S.	1·90	1·90	0·58	W.	1·00	On the naze to the west. Large stones. Flat platform stones. A few stones were 10 cm. sunk in sand. Under present surface was fine gravel.
484	2	S.	508	pear-shaped	3·20	2·50 1·90	—	—	—	—	0·50	E. N. E.	---	Broadest (hindmost) part of ring was horizontal, the front part sloping, so that doorway lay 0·80 M. lower than back wall. Ordinary stones.
485	5	S.W.	514	oval	4·05	1·80	1·80	N. E. —S.W.	2·20	1·85	0·32	N. E.	0·60	Large and small stones. Flat platform stones. Doorway not in long axis of ring. (Musk-ox).
486	5	S.	483	circ.	2·50	2·50	2·50	E.—W.	1·25	1·25	0·40	S.	—	Small stones 2—10 cm. sunk in sand. Platform stones seen but faintly.
487	18	S.	504	circ.	2·00	2·00	—	—	—	—	0·58	N.	—	Small stones, much sunken.
488	9	S.	504	oval	3·15	1·90	1·90	—	1·57	1·58	—	—	—	Small stones. Flat platform stones. Indistinct doorway.
489	65	W.	483	circ.	1·25	1·25	—	—	—	—	0·30	N. W.	0·50	Small, flat stones.
490	2	W.	489	rectang.	1·80	1·20	1·20	N. W. —S. E.	0·90	0·90	0·33	N. E.	—	Ordinary, flat stones. Whole platform paved with flat stones.

All the traps lay quite open, only the long walls, the locking stones and the falling door still standing, and they gave the impression of being very old.

The permanent meat-depots were very solid:

No.	Distance and Direction from No.		Form	Length	Breadth	Height	Remarks
503	8	E. 483	circ.	0·50	0·50	0·40	Open. Large stones.
504	1	E. 503	—	—	—	0·60	Open. Large stones.
505	1	E. 504	—	—	—	0·50	Open. Ordinary stones. Bottom much overgrown. Many covering stones.
506	3	E.N.E. 504	—	—	—	0·50	Open. Large stones. Flat covering stones.
507	2	E.N.E. 506	—	—	—	1·00	A fixed stone forming the one wall, otherwise ordinary stones.
508	3	E.S.E. 507	—	—	—	0·30	Well built. Large stones. Some covering stones fallen.
509	2	E. 508	circ.	1·00	1·00	0·30	Open. Large stones.
510	close	S.E. 491	circ.	0·30	0·30	0·30	Ordinary stones. Even ground. (Feathers).
511	close	S. 493	semicirc.	0·60	0·30	0·30	Open. A large, fixed stone forming the one wall, otherwise ordinary stones.
512	1	S. 501	circ.	0·30	0·30	0·30	Open. Large stones.
513	—	— —	circ.	0·50	0·50	0·50	In S.E. corner of stone-oval 498. Large stones. (Musk-ox).
514	2	S.W. 513	circ.	0·50	0·50	0·50	Open. Large stones.
515	5	S.E. 485	circ.	0·50	0·50	0·50	Open. Large stones.
516	20	S. 515	circ.	1·00	1·00	0·30	Open. 2 large, the rest ordinary and small stones. Bottom paved with flat stones.

At several places among the stone remains we found fossil pieces of whale skeleton. Many musk-ox bones were also found round about the hunting-ground.

Between the two hunting-grounds, 200 meters from the lake, we found 2 tent-rings (517), east-west from one another and 50 meters between. They were both broken up. The one had been 1·75 M. in diameter and built of ordinary, rounded stones; the other 2·00 M. in diameter and flat, ordinary stones.

Between the easternmost tent-ring and the lake — 50 meters E.N.E. of the tent-ring — we found 2 spots (518 and 519) which had been paved with stones. The distance from the one to the other was 8 meters and they each consisted of a collection of flat stones with one large rounded boulder. I imagine that both have been made by children (cf. fig. 13) and the rounded boulder has served as seat. I have

found these seats at most places where children have played with flat stones.

In addition to the above, many Eskimo stone-remains (520) also occur on the eastern bank of Sælsøen, east of Lakseelven and just to the north of its outlet from the lake (information from Peter Hansen).

Rypefjeldet (lat. 76° 56′, long. 20° 22′, see Pl. VI). Here we found 10 winter-houses, 48 tent-rings, 13 shelters, 13 traps, ca. 27 permanent meat-depots, ca. 18 temporary meat-stores, 7 fire-places, 1 grave, 3 receptacles at graves, 2 structures made by children, 1 set of kayak rests and 4 other stone remains (fig. 42).

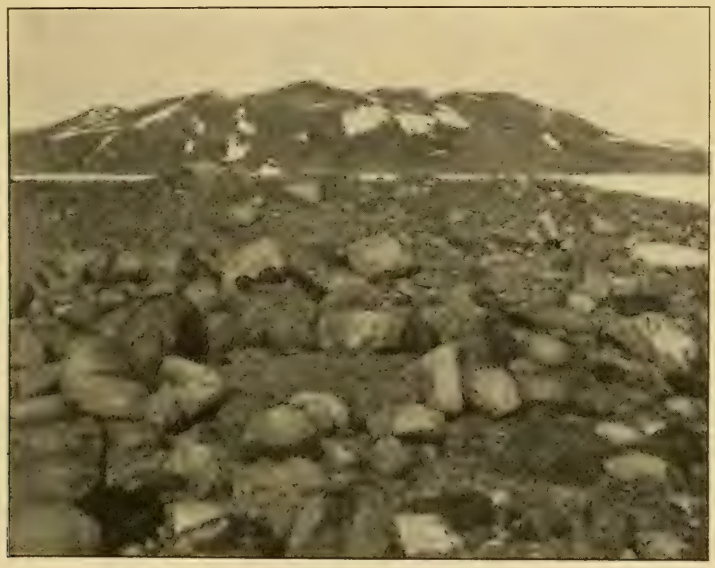


Fig. 41. Stone-oval 495. Sælsøen.
Seen from the S. W. (Photo. by the author).

Rypefjeldet is an isolated hill which lies on the north shore of Dove Bugt, south of Sælsøen and west of Hvalrosodden. It is the land on the south and south-east side of the hill which has been occupied, but the name is also used to include a tenting-ground in the neighbourhood, as also some scattered stone-remains.

Between Sælsøen and Dove Bugt the country is barren, boulder ground with many ridges, the form of which shows distinct traces of the influence of water. The hollows between the ridges are cut through by small rivers or brooks or filled up with small lakes. There is usually some vegetation round about the rivers. Towards the north-west the barren land extends up towards the hill Brystet, being separated from this by a valley, with comparatively rich

vegetation, which reaches from Sælsøen to Rypefjeldet. I imagine that the reindeer and musk-ox herds have followed this valley in their wanderings. Now only birds, hares, lemmings and foxes occur. The south-east and south slopes of Brystet are well covered with vegetation. Between Brystet and Rypefjeldet and further to the east of the latter runs a river — Gravelven — which in the beginning of summer, towards the end of the period when the snow is melting, runs down in such a flood that it is unpleasant to pass.

The winter-houses lie in a western and an eastern group. The western winter-houses are in a corner between the cliffs, in good shelter from winds from the S. W. through W. and N. to N. N. E. To the east and south the surrounding country slopes evenly downwards to the sea; to the west and north the land rises more steeply. The shore off the winter-houses though not quite low can yet be traversed with dog-sledges. More to the east — between the two groups of houses — the shore is low and gravelly. From this a low ridge runs a little way inwards and at the eastern end of this ridge is the eastern group of winter-houses. Behind these winter-houses the land rises evenly up towards Rypefjeldet. The ground is clay, covered with a mixture of earth and beach-gravel with abundant vegetation. The whole of the stretch along the foot of Rypefjeldet, between the 2 groups of houses, has mostly the character of a bog sloping towards the sea, with many running water-courses, which are constantly fed from the snow lying on the slopes of Rypefjeldet. The stretches of bog are broken here and there by a small pool of water, a bank of stones or gravel lying a little higher, or a rocky ridge, which often runs right out to the shore. The western houses were found near one of these. One of the gravel banks between the 2 groups of houses leads right out to the beach and ends here in a quite low, projecting point, ca. 200 meters broad and ca. 100 meters long; this was used as a tenting-ground. West of the gravel bank the hilly ground again projects and forms a small rocky point on the coast-line between the low point and the western winter-houses. On this rocky point we found larger, well-built, permanent meat-depots and above them another tenting-ground with tent-rings, shelters and a trap. Between this point and the westernmost houses there has not been sufficient room for the many small water-courses, and these have combined to a fairly large brook.

Further west the shore bends to the north and becomes very steep. Here we found several traps on Rypefjeldet itself, high up and lying singly at some distance from each other. The traps occurred right round the hill.

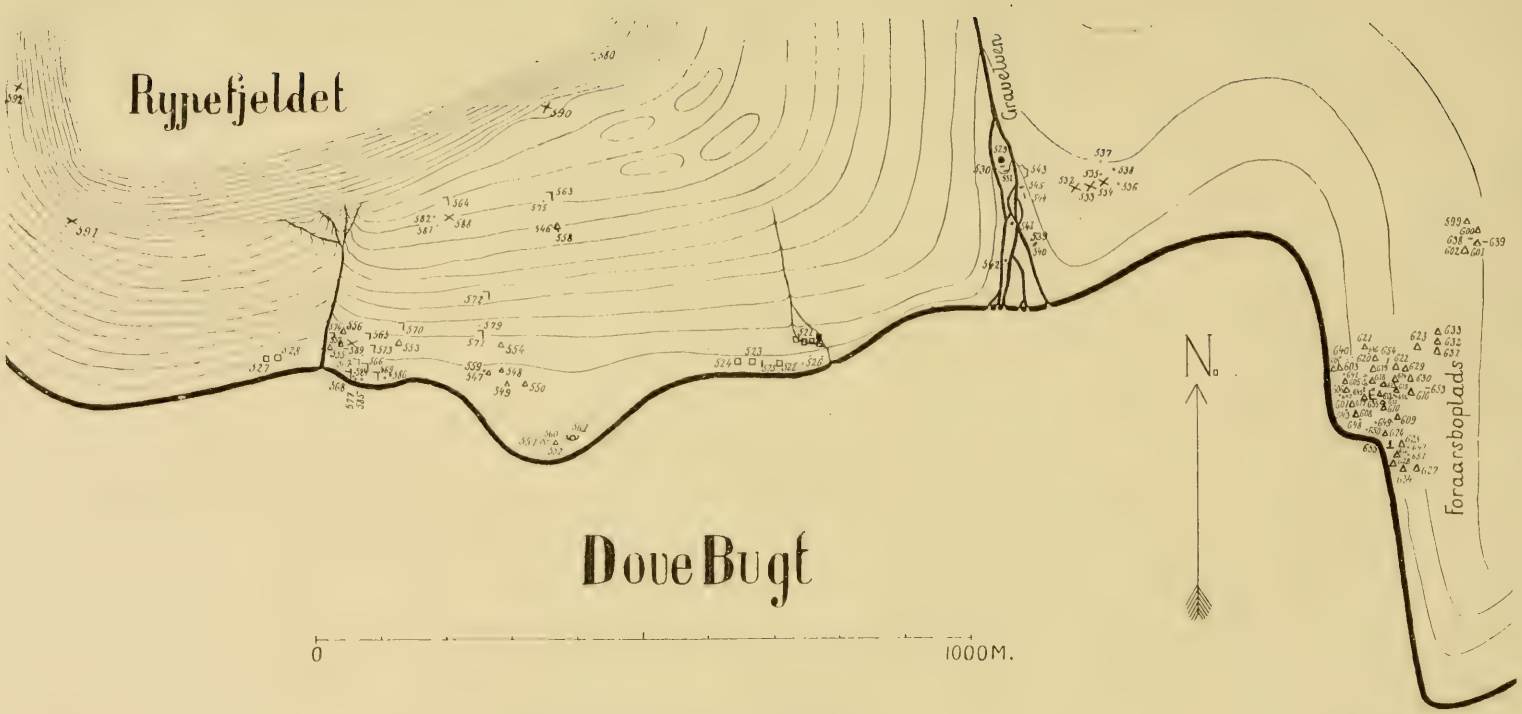


Fig. 42. Settlement on Rypefjeldet.
Scale: 8·65 mm = 100 meters. (Sketch by the author).

A third tenting-ground, Foraarsboplads, which is described in this section, was found ca. 1 kilometer east of all the other stone-remains.

Regarding the conditions at Rypefjeldet MYLIUS-ERICHSEN's diary for 1906 contains the following:

"One can see that the north wind is a strong master and comes down with severe snow-storms; on the lee side, to the south, much snow often lies on the shore, like a snow-foot — and whilst the stones of the hill on the north side are often bare of snow — blown off — there are piles of snow in the hollows and clefts on the south side of the hills."

And further on we find:

"Eskimos may perhaps still be found deeper in or higher up — fled from their kinsmen — — —."

Regarding the settlement the diary states:

"Winter-settlement. On a point, approximately west and in the neighbourhood of the Foraarsboplads, we found 5 winter-houses[1], 3 of them very distinct[2]. One house (the westernmost)[3] was drawn by ACHTON FRIIS[4]. Its length from the hindmost stone over the platform to the innermost, flat, top-stone over the passage (the opening to the inside), was 2·35 meters; the breadth over the broadest place (probably just in front of the platform) 1·50 M.[5]

On $^{6}/_{9}$ 1906 JARNER found ruins of houses[6] a little to the west of this spot.

Close to the north bank of the river[7] we found three fox-traps[8], 2 of which were well preserved; the end-stones had been removed."

In a letter to the Second-in-command, MYLIUS-ERICHSEN also writes:

"$^{25}/_{8}$ 1906. Yesterday found a whole Eskimo town (unfortunately no residents): 3 old winter-houses[9] with 2 permanent meat-depots[10], also 6 tent-rings[11] and many stone heaps[12], which are partly meat-depots, partly probably human graves. I am extremely pleased with this discovery, which will give me still 3 days' work in measuring, digging out etc.

Here is a list of the things I wish sent on as quickly as possible: 2 spades, 1 large iron-lever, 1 pick, 6 empty sacks, for excavation of the Eskimo ruins.

$^{29}/_{8}$ 1906. — — The digging implements asked for are much wanted, as I am constantly finding new Eskimo ruins."

MYLIUS-ERICHSEN was assisted in his work on Rypefjeldet by JOHANSEN, who measured a number of ruins at Foraarsboplads; but as a lot of work still remained to be done, according to the information received, I investigated them myself in the early summer of 1908.

The winter-houses in the eastern group, 8 in all, were of different age. The 5 oldest (521) were found ca. 50 meters from the

[1] (522—525). [2] (522—524). [3] (524; fig. 44). [4] Mr. ACHTON FRIIS was artist on the Expedition. [5] These measurements were taken before excavation. [6] (527—528). [7] Gravelven. [8] (532—534). [9] (522—524). [10] (525(?)). [11] (547—552). [12] (526).

shore in the south, ca. 8 meters above the sea. They seemed very old and were now so much sunken that only a faint ground-plan could be seen. Small streams of water now run through them also and have led to an extensive growth of willow etc. These winter-houses were not investigated or measured, as it appeared that this would only have been possible after draining off the water by means of canals.

The other 3 winter-houses in this group (522—524) were found ca. 20 meters from the shore and ca. 3 meters above the sea. The sketch (fig. 42) shows the relative situations of the different stone remains. For the form and size of the winter-houses, see Pl. II.

In winter-house 522 a great deal of water collected as excavation proceded, so that we were at last obliged to lead it out by a channel. Here as everywhere, the most practical method was to uncover a little each night and allow the sun in the daytime to thaw as much as possible. Both the floorplace and the platform in this winter-house consisted of earth and were covered with flat stones. The platform edge was vertical and formed of stones placed on end. The floorplace sloped evenly downwards from the lower edge of the platform to the floor of the passage. On the front edge of the platform, to the right of the doorway, were 2 small, carved figures in a small marked-off space, which had probably served as lamp-stand. (Walrus, bearded seal, fjord seal, reindeer, musk-ox and a piece of whalebone).

The next two, very recent, winter-houses (523 and 524) were first investigated by Mylius-Erichsen, who procured from them, in addition to made articles, a large quantity of bones. (Hare, dog (including very old dog and young puppy), polar bear, walrus, bearded seal, fjord seal, reindeer (including many antlers, some of which had been cast naturally) and musk-ox (including a skull with horns)).

In the winter-house 523 the floor rose gradually from the passage, over the space in front to the platform (main platform and side platform), and was paved everywhere with flat stones. The platforms had an underlayer of gravel, the floor, of earth. Along the east side wall, almost in the middle of the platform, was a small lamp-place, 0·40 M. long, 0·20 M. broad and 0·10 M. deep, and in front of this was a small space, perhaps for blubber and moss, 0·20 M. long, 0·20 M. broad and 0·10 M. high (fig. 43). The bottom of the small annex to the left of the doorway lay on a level with the floor of the house, thus lower than the side platform. The side walls have been so high, that the roof has been 0·70 M. higher than the level of the platform. The roof stones were large,

thin, flat stones. In the house a large slate-knife was found, as also a number of wooden rafters which had perhaps been used in the construction of the roof. (Polar bear, fjord seal and reindeer (antlers and bones)).

Winter-house 524 was practically joined on to the house 523; the interior was almost completely taken up by the platform, which also consisted here of gravel, covered with flat stones. The platform graduated evenly, without any appreciable edge, over into the likewise stone-covered floorplace, which again continued in an even slope down towards the bottom of the passage, the outer end of

Fig. 43. Lamp-place in winter-house 523. Rypefjeldet.
Seen from above from the N.W. corner of the house. (Cf. 523 in Pl. II).
The lamp-place is seen in the middle of the picture. (Photo. by the author).

which lay 0·30 M. lower than the ground about it. In the east wall of the house was a small room opposite the middle of the platform. This room was well built with stones compactly placed; its bottom lay 0·30 M. lower than the platform. The opening into the room from the platform was but low and has not reached quite up to the roof. On the bottom we found skins and hair (of bear and hare) which were fairly fresh and stinking with urine. Against the same wall, close to the front edge of the platform, was a lamp-place. Wood was found in the house. This winter-house was exceedingly well-preserved when found by MYLIUS-ERICHSEN; it was drawn by ACHTON FRIIS (fig. 44). (Hare, fjord seal, reindeer (including some antlers)).

To the east and close to the 2 last-mentioned winter-houses some stonework (525) projected above the ground. A portion of it was dug out, but only some bone remains were found. (Hare, polar bear, fjord seal and musk-ox). The remaining part of the stonework sunk under the surface and was so overgrown, with so much earth above it, that we could not afford the time to examine it closely. It was probably the remains of two very ancient winter-dwellings.

Some temporary and permanent meat-stores (526) were found ca. 50 meters east of the winter-house 522. The land here is bare, with large and small stones scattered everywhere.

Fig. 44. Winter-house 524. Rypefjeldet.
Seen from the south. (Drawing by Aguton Friis).

In the western group, ca. 30 meters from the shore and ca. 7 meters above the sea, we found two winter-houses of almost the same age and close together.

In the one to the west (527) the platform was of earth, covered by flat stones; the platform edge was a row of stones. The floor of the house was paved with flat and rounded stones and sloped evenly down to the lower lying passage. The roof of the house has been 0·60 M. higher than the platform, but the part of the roof which has been just above this place, had been removed by the Eskimos before they left the house for the last time[1]. The remainder of the roof had fallen. The lamp has stood against the

[1] Cf. Steensby: p. 286.

west wall on the front edge of the platform. The small annex immediately in front of the lamp-place — like the small room in house 524 — has not been so high as the house-space itself, as is usually the case with these small additions. (Fjord seal, reindeer).

Close to this house to the east lay winter-house 528. The edge of the platform was vertical and composed of stones; the platform was formed of sand and covered with flat stones. The floor was likewise covered with flat stones, under which came a layer of sand above the surface of the ground. From the edge of the platform the floor sloped steeply down towards the bottom of the passage. The lamp-place has been on the front edge of the platform, at the east wall of the house. The roof of the house has been ca. 0·60 M. higher than the platform. (Hare, polar bear, fjord seal, reindeer (including many antlers, some of which had been cast naturally)).

On one of the small islands in the delta of Gravelven we found a grave (529); it was well-built of large and small stones, but the covering stones had now in part fallen down into the grave. A large, specially cut piece of wood (European or Siberian tiller) had been used as support of some of the covering stones. The long axis of the grave lay east-west; its dimensions were: length 1·42—1·55 M., breadth 0·38 M. at the west end, 0·67 M. over the middle and 0·45 M. at the east end; the height was 0·45—0·50 M. The average thickness of the walls was ca. 0·75 M. Grass was now growing inside the grave and one could see that animals had disturbed the position of the body, as the parts of the skeleton lay in great disorder. They lay in coarse sand, whilst the bottom of the grave consisted of the natural gravel of the place. Grave articles (2 woman's knives, several awls, needle-case etc.) were found partly in the grave, partly among its stones and partly in a receptacle close by (530). This receptacle was 0·30 M. in diameter and 0·30 M. high and had fine gravel in the bottom, and the extremely well-preserved grave-articles were found here under a poor stone-covering.

A second receptacle (531) was found $2^1/_2$ meters S. E. of the grave, but contained only a couple of pieces of wood.

The 3 traps, already mentioned by MYLIUS-ERICHSEN, had undoubtedly been set up after the burial in the bed of the river. They were found close to the east of the river, built on gravel. Their dimensions are given in the table p. 307.

Close to the back wall of the last trap (534) we found a small stone-structure resembling a permanent meat-depot (535) and 0·30 M. long, broad and high. It was open and the flat covering stones lay beside it; it has contained dog-flesh. This is the only case of a trap being in such immediate connection with a meat-

No.	Trap			Falling door	Pointed stone	Doorway towards	Remarks
	Length	Breadth	Height				
532	0·53	0·14	0·18	at the side	in place	S.	Built of large and small stones. Front covering stone very conspicuous.
533	0·55	0·13	0·12	—	—	S.	Built of small stones. Broken down. Bottom paved with flat stones.
534	0·63	0·13	0·17	at the side	in place	S.	Built of large stones. Mark stone like 532. Bottom paved with flat stones. Hindmost covering stones removed.

depot. The smallness of the stone-structure speaks against the depot having been built for use as such; it has rather been placed there for the smell to attract the foxes.

Near the traps we found some other stone-remains, namely, 7 permanent meat-depots, 2 fire-places, 1 receptacle, as also 1 indeterminable ruin; they were situated partly on the same level as the traps, partly in the bed of the river itself.

On the level we found many scattered bones. (Ptarmigan, polar bear, fjord seal, reindeer (antlers)).

Details regarding the permanent meat-depots:

No.	Form	Length	Breadth	Height	Remarks
536	oval	0·60	0·45	0·30	Built of large stones in a hollow on the plateau. Covering stones removed. (Wool, probably of musk-ox).
537	—	—	—	—	Found on the plateau; in ruins.
538	circ.	0·50	0·50	0·15	On the plateau. Built of ordinary stones. Open. Bottom paved.
539	square	0·30	0·30	0·40	Found in river-bed, ca. 100 meters from the shore. Built of large stones. (Reindeer).
540	circ.	1·00	1·00	—	Found in river-bed. Open.
541	circ.	1·00	1·00	—	Found in river-bed. Large stones. Open. (Fjord-seal).
542	circ.	1·00	1·00	—	Found in river-bed. Built of large stones. Bottom much overgrown.

Above the slope down towards the bed of the river we found a stone-structure (543) consisting of a single row of large and small stones. Its long axis lay north-south and there was only the one long wall with 2 end walls at right angles to it. The northern end wall was 1·90 M. long, the southern 2·50. The long wall was 5·00 M.;

a little to the south of the middle the wall curved outwards to the east side in a semicircle, with radius 0·62 M. The stone furthest to the west in the end walls lay right out to the slope descending towards the bed of the river. The rest has probably been destroyed.

Below the slope, on the margin of the river bed, we found the 2 fire-places (544) as also some built up stones (545), which supported a horizontal stone 0·40 M. above the ground. Under this was a small, empty space, possibly a grave receptacle.

Between the 2 groups of winter-houses we found 12 tent-rings, 12 shelters, 2 traps, 7 permanent meat-depots, 8 temporary meat-

Fig. 45. Remains of children's playthings 561. Rypefjeldet.
Flat stones were arranged in a curve with a ring against the middle. (Photo. by the author).

stores, 2 fire-places and 1 stone structure made by children, lying mostly on the beach, but also higher up on the land.

The dimensions of the tent-rings are shown in the table p. 309.

Under a flat stone ca. 5 meters south of the tent-ring 549 we found a lock of hair (human hair).

Tent-ring 556 was built on clay ground. From the doorway a passage 0·60 M. broad led in to the platform. The floorplace on both sides of the passage was paved with flat stones (Pl. III) in consideration probably of the clay undersoil. On the platform, on the other hand, there was no paving.

No.	Form	Diameter	Platform edge		Distance from platform edge to		Breadth of doorway	Doorway towards	Remarks
			Length	Direction	Back wall	Doorway			
546	circ.	1·90	1·90	E. S. E.—W. N. W.	0·65	1·25	0·55	S. S. W.	Large and ordinary stones. Platform covered by flat stones. 40 meters above the sea. Good view over the bay.
547	pear-shaped	—	3·10	E.—W.	1·80	1·20	1·00	S.	Furthest west on the broad point. Ordinary stones, flat platform stones. Passage out from tent 1.00 M. long. (Fjord seal).
548	—	—	—	—	—	—	0·30	S.	Much overgrown and indistinct. Ordinary stones. A conspicuous piece of white quartz in middle of ring (cf. p. 197). (Walrus, bearded seal).
549	circ.	3·25	—	—	—	—	0·40	S.	Situated on a thick layer of small stones; dry; 2 lamp-stones in middle of ring. (Bean-goose, hare, bearded seal, fjord seal).
550	circ.	2·00	—	—	—	—	0·40	S.	Large stones; much overgrown and old. (Musk-ox).
551	circ.	3·50	—	—	—	—	0·40	S.	Ordinary stones. (Bean-goose, hare, bearded seal, fjord seal, reindeer).
552	circ.	3·00	—	—	—	—	0·30	S.	Ordinary stones. (Bean-goose, bearded seal, fjord seal, musk-ox).
553	circ.	2·00	—	—	—	—	0·30	S. S. E.	Much overgrown. Some stones inside doorway to the left.
554	oval	—	2·50	E.—W.	1·80	1·60	0·30 0·50	S.	Large stones. Flat platform stones. Much overgrown. From doorway a double passage, formed of 3 rows of stones, led 0·80 M. outwards.
555	circ.	2·50	—	—	—	—	—	—	Somewhat indistinct. (Fjord seal).
556	oval	—	4·00	E.—W.	1·75	1·55	0·60	S.	Ordinary stones, sunk 10 cm. (Dog, fjord seal).
557	circ.	2·50	2·50	E.—W.	1·25	1·25	0·60	W.	Doorway close to edge of platform.

Further, bones were found in tent-ring 554, (bean goose, hare, bearded seal, fjord seal and reindeer (antlers)). Round the tent-rings on the flat point we found bones of polar bear, bearded seal and fjord seal.

Close to the tent-ring 546 to the south was a small, temporary meat-store (558), 0·30 M. in diameter. A second (559), 0·20 M. in all directions, lay 2 meters west of tent-ring 547.

At the tent-rings 551 and 552, furthest out on the flat point, we found a fire-place (560), 1 meter east of the doorway to tent-ring 551. It was 0·25 M. square, 0·10 M. high and open to the south. —

Fig. 46. Shelter 563. Rypefjeldet.
Seen from the south. The white stones along the walls are partially seen. (Photo. by the author).

Further, 20 meters E.N.E. of tent-ring 552, on a small gravel bank, we found a structure (561) made of flat stones, probably built by children; 2 large stones lay beside it (fig. 45).

Three meters S. E. of tent-ring 557 was another fire-place (562). It was 0·20 M. long, 0·10 M. broad and 0·10 M. high. (Bean-goose, hare and fjord seal).

Details regarding the shelters are given in the table p. 311.

The following bones were found in the shelters: in shelters 565, 566 and 567, bean-goose, hare and reindeer; in 565 also fjord seal, in 567 gray gull, in 567 walrus; in 571 reindeer antlers and reindeer in 572.

No.	Form	Length	Main axis	Breadth	Distance from back wall to platform edge	Breadth of doorway	Doorway towards	Height of highest stone	Remarks
563	4-sided	1·53	N. E.—S. W.	1·35	0·93	0·30	S. W.	0.22	(Fig. 46). Compactly built of ordinary stones. Flat stones on platform. Along side walls a 10 cm. broad margin of white stones (cf. p. 197).
564	—	—	—	—	—	—	—	—	Built against S. W. side of a large stone. Somewhat broken down. Close to east of the shelter a collection of pieces of white quartz (cf. p. 197).
565	oval	1·60	N. E.—S. W.	0·90	1·00	0·90	S. W.	0·30	Large stone. Much overgrown.
566	4-sided	2·20	N.—S.	0·90 1·50	1·00	0·30	N.	0·75	(Fig. 5). Much overgrown. The stones were large pieces of rock, some of which stood on end.
567	4-sided	2·40	N.—S.	1·10	1·20	0·60	S.	0·45	(Fig. 47). Large stones. Platform edge somewhat indistinct.
568	circ.	1·50	—	1·50	—	—	—	0·55	East wall partly broken down.
569	4-sided	1·00	E.—W.	0·80	—	0·80	W.	—	Large stones in north and east walls. Ordinary stones in south wall.
570	4-sided	1·65	E.—W.	1·00	—	0·60	S. E.	0·30	Built on S. side of large boulder. Large stones. A large stone in middle of and outside doorway.
571	4-sided	1·35	N.—S.	1·50	—	0·40	S.	—	Built on S. side of a large stone. Divided into 2 parts by a double row of stones. White stones (cf. p. 197) used in walls.
572	irregular	2·25	N.—S.	1·15	1·15	0·30	S.	0·40	(Fig. 6). Built on S. side of a large stone. A margin of white stones (cf. p. 197) 20—35 cm. broad along the walls.
573	4-sided	1·20	N. W.—S. E.	0·80	—	0·80	S. E.	—	(Fig. 48). Built of ordinary stones on N. E. side of a large stone. Much overgrown.
574	4-sided	1·10	N. W.—S. E.	0·93	—	0·28	S.	0·25	(Fig. 49). Ordinary stones. Somewhat overgrown. Platform just inside the doorway.

Round about the point where shelter 556 was situated, we found the bones of hare, polar bear, walrus, bearded seal, fjord seal and reindeer, including many antlers.

Of the 8 temporary meat-stores, 2 (558—559) have been mentioned above; the features of the others are seen in the following table.

No.	Form	Length	Breadth	Height	Remarks
575	circ.	1·00	1·00	—	Built of large stones. Open. (Fjord seal).
576	square	0·30	0·30	0·30	Open. Close north of 568.
577	oval	0·60	0·50	0·20	10 meters from beach. Large stones. Open.
578	oval	1·25	0·60	0·30	5 meters N.W. of 577. Large stones. Ordinary covering stones. Open.
579	square	0·30	0·30	0·30	Built on north side of a rock near shelter 571.
580	circ.	1·25	1·25	—	On Rypefjeldet, ca. 100 meters above the sea.

The permanent meat-depots, which are described in the following table, were mostly found on the small rocky naze, between the low, broad point and the western group of winter-houses.

No.	Form	Length	Breadth	Height	Remarks
581	oval	0·60	0·50	0·22	In ruins. Large stones. Flat covering stones. Flat stones on floor. (Bones of reindeer).
582	oval	1·00	0·15 0·60	0·40	Built in a rocky ravine. Flat stones on floor and ordinary stones for the ends. Large, flat covering stones.
583	oval	1·20 1·20	1·00 0·50	0·50 0·50	Had 2 chambers. Large stones. Floor paved. 8 meters S. E. of trap 589.
584	—	1·25	—	—	Formed by a piece of rock being placed against some stones.
585	oval	1·00	0·60	0·40	Very solidly built. Open.
586	oval	1·25	0·70	0·50	10 meters from the beach. Large stones. Well built.
587	square	0·30	0·30	0·30	Large stones. Well built. 2 meters W. of 586.

In addition to the 2 fox-traps (588 and 589) already mentioned, we found 4 (590—593) round about Rypefjeldet at the same height (ca. 60 meters) above the sea; further, 4 others (594—597) in the valley extending from Rypefjeldet to Sælsøen; many foxes are still there at this day.

No.	Distance and	Direction from	No.	Height above sea	Distance from sea	Trap			Doorway towards	Falling door	Pointed stone	Remarks
						Length	Breadth	Height				
588	—	—	—	—	—	0·65	0·10	0·15	S.	pres.	—	Built on gravel. Very conspicuous white quartz stone (0·18 × 0·12 × 0·12 M.) among the stones of the trap (cf. p. 197).
589	—	—	—	8	40	0·65	0·18	0·12	S.	abs.	—	On the point between shelters and meat-stores. Built on gravel. Small stones. Hindmost covering stones removed.
590	—	—	—	60	—	0·50	0·13	0·19	N. N. W.	pres.	pres.	Ordinary stones. Well built, on earth though solid rock projected just at the side of the trap.
591	—	—	—	60	200	0·71	0·14	0·20	S. S. W.	at side	—	Large stones. Well built, on rock. Hindmost covering stones removed.
592	—	—	—	60	—	0·75	0·20	0·18	S. W.	pres.	pres.	Well built, on rock. One of the heavy locking stones was black and very conspicuous against surroundings.
593	—	—	—	60	—	1·00	0·28	0·22	N.	abs.	pres.	On N. E. corner of Rypefjeldet. Large stones. Built on rock. Hindmost covering stones removed.
594	—	—	—	—	3000	0·62	0·20	0·18	S. S. E.	at side	—	Built of rounded stones; floor paved. Front covering stones away.
595	1500	N. N. E.	593	—	2000	0·62	0·25	0·22	S.	at side	—	Built of rounded stones.
596	100	S. E.	595	—	—	0·65	0·16	0·25	S. E.	pres.	—	Built of rounded stones. Hindmost covering stones away.
597	—	E.	596	—	—	—	—	—	E.	—	—	Small stones. Not very apparent in landscape, as it was very broad and long, but not high. Measurements lost.

Trap 593 and the traps 13 and 378 were larger and more solid than the other traps found on the Expedition. Regarding the last

Fig. 47. Shelter 567. Rypefjeldet.
Seen from the south. Large pieces of rock used in its construction. (Photo. by the author).

Fig. 48. Shelter 573. Rypefjeldet.
Seen from the east. A large stone is used as the one side wall. (Photo. by the author).

MYLIUS-ERICHSEN wrote in his diary (see p. 275) "wolf-trap"[1]. The very lonely position of the traps might well speak in favour of their being constructed for the capture of the shy polar wolves; I am of the

[1] Cf. LYON: pp. 133—34, 338, 339 and PARRY: pp. 165, 180, 186, 514.

opinion, however, that they were not large enough for this purpose, and that they should rather be regarded as fox-traps.

East of the valley between Rypefjeldet and Sælsøen and ca. 3 kilometers from the shore, we found a temporary meat-store (598) in a hollow cut through by a water-course; the latter flowed out into a little lake with steep banks except just where the water-course entered. The meat-store was oval, 1·00 M. long, 0·60 M. broad and 0·40 M. deep. It was open when found.

About 1200 meters E. S. E. of the winter-house 522 we found the settlement Foraarsboplads mentioned by Mylius-Erichsen and I had the opportunity of examining it more closely in the early summer

Fig. 49. Shelter 574. Rypefjeldet.
Seen from the south. (Photo. by the author).

of 1908. I found there 36 tent-rings, 1 shelter, 8 permanent meat-depots, 5 temporary meat-stores, 3 fire-places, 1 stone structure made by children, 1 set of kayak rests and 2 rows of stones lying on the west side of a slope, which ran almost in the direction north to south.

The place had been examined somewhat hurriedly by Mylius-Erichsen, whose diary contains the following information regarding it:

"Foraarsboplads, tenting-ground on a naze west of Hvalrosodden, east of the winter-houses on Rypefjeldet.

14 distinct tent-rings, with doorways in 2 of them, distinct platform stones in 3 and altogether 8 easily seen meat-depots.

One meat-depot[1] is 0·90 M. long, 0·50 M. broad and another[2] is 1·70 M. long, 1·15 M. broad; the measurements are of the interior.

[1] (644). [2] (635—636).

No.	Form	Length	Breadth	Length from platform edge	Direction from platform edge	Distance of platform edge to back wall	Distance of platform edge to doorway	Breadth of doorway	Doorway towards	Passage out from tent-ring	Remarks
599	circ.	2·50	2·50	—	—	—	—	—	—	—	12 meters above the sea. Small stones. Indistinct doorway.
600	oval	1·10	0·90	—	—	—	—	0·60	W.	—	Small stones.
601	oval	—	—	2·00	E.—W.	0·90	1·25	0·30 0·35	N.W.	0·60	Flat stones in a double row. Passage of doorway divided longways by a row of stones.
602	circ.	2·50	2·50	—	—	—	—	0·50	S.	—	Many flat stones in walls and inside ring.
603	oval	—	—	2·80	N.—S.	1·25	1·90	0·60	W.	—	Large and ordinary stones. 2 flat lamp stones in front of platform.
604	square	—	—	3·00	N.—S.	1·25	1·75	0·30 0·40	N.W. W.	0·50 0·60	Large and ordinary stones. In south wall a semicircular niche 0·63 M. deep. Threshold stone in middle of N.W. doorway.
605	circ.	2·50	2·50	—	—	—	—	—	—	—	Large stones. Indistinct doorway. A large stone in middle of tent-ring. (Bean-goose).
606	oval	—	—	3·15	N.—S.	1·60	1·30	0·75	W.	—	Large stones. Flat platform stones. An ordinary stone in middle of doorway.
607	circ.	2·50	2·50	—	—	—	—	—	—	—	Ordinary stones. Indistinct doorway. (Bean-goose, musk-ox).
608	circ.	2·50	2·50	—	—	—	—	—	—	—	Ordinary stones. No doorway. (Musk-ox).
609	circ.	—	—	3·60	E.—W.	1·80	1·80	—	N.	0·60	8 M. above the sea. Large and ordinary stones. 2 rows of stones led 0·60 M. from doorway into ring and then at right angles to periphery. Cooking-place to left of doorway. (Bean-goose, reindeer (antlers), musk-ox (hair)).
610	circ.	3·60	3·60	—	—	—	—	0·70	W.	—	Large stones. A niche 1·25 M. long and 1·25 M. deep in both north and south wall.
611	circ.	3·60	3·60	—	—	—	—	0·60	W.	—	Large stones. At south wall a curve of stones cut off a small space 1·30 M. long and deep.
612	circ.	3·00	3·00	—	—	—	—	0·50	S.W.	—	
613	circ.	3·00	3·00	—	—	—	—	—	W.	—	Large stones. Somewhat broken down.
614	circ.	3·00	3·00	—	—	—	—	1·00	W.	—	Ordinary stones. A large stone in middle of doorway.
615	circ.	3·60	3·60	—	—	—	—	0·55	W.	—	Ordinary stones. (Bean-goose, musk-ox).

616	4-sided	—	—	3·15	N.—S.	2·00	1·25	0·40	N. W.	—	Ordinary stones. Pointed platform edge stones. (Hair of reindeer or musk-ox).
617	circ.	1·50	1·50	—	—	—	—	—	—	—	Ordinary stones. Indistinct doorway. (Bearded seal, fjord-seal).
618	circ.	3·00	3·00	—	—	—	—	—	—	—	Ordinary stones. Indistinct doorway. (Bean-goose, fjord-seal, reindeer, (antlers), musk-ox).
619	circ.	3·00	3·00	—	—	—	—	0·50	S.	0·40 (?)	Large stones. Some stones lay in middle of ring (Musk-ox).
620	circ.	2·50	2·50	—	—	—	—	—	—	—	Ordinary stones. Somewhat disturbed.
621	circ.	2·00	2·00	—	—	—	—	—	—	—	Large stones. Indistinct doorway.
622	square	2·30	2·30	—	—	—	—	0·55	S. W.	—	Large stones in west wall; otherwise ordinary and small stones.
623	circ.	1·70	1·70	—	—	—	—	—	—	—	Ordinary stones. Indistinct doorway.
624	4-sided	4·50	3·15	3·15	N.—S.	2·00	2·50	0·60	W.	—	Ordinary stones. Flat platform edge stones. Rounded back wall. (Reindeer (antlers)).
625	circ.	2·50	2·50	—	—	—	—	—	—	—	Ordinary stones. Indistinct doorway.
626	circ.	2·50	2·50	—	—	—	—	0·30	W.	—	Semicircular niche of 0·63 M. radius interiorly in south wall. (Bean-goose).
627	circ.	3·50	3·50	—	—	—	—	0·75	W.	—	Ordinary stones. (Musk-ox).
628	circ.	3·00	3·00	—	—	—	—	—	—	—	Ordinary stones. Whole floorplace paved with flat stones.
629	—	—	—	—	—	—	—	—	—	—	Large and ordinary stones. Disturbed.
630	—	—	—	—	—	—	—	—	—	—	Large and ordinary stones. Disturbed.
631											Small flat stones. Have had platform edge. Disturbed.
632											
633											
634											Large and ordinary stones. Disturbed. (Musk-ox).

A small tent-ring is 3·25 M. long (the whole length), 1·85 M. long from the back wall to the edge of the platform and 2·70 M. broad across the latter; a meat-store at the side.

Most of the tent-rings have direct opening towards the sea i. e. towards the west[1]. (The direction is approximate).

A larger tent-ring (drawn by Achton Friis)[2] with doorway towards the east[3], built presumably against westerly[4] winds, is 1·64 M. long, floorplace in front of platform 1.90 M. (altogether 3·54 M. long); breadth across platform 3·40 M.

All on gravelly ground sloping towards the sea at from 10—30 feet[5] above the surface of the water, with somewhat graveily foreshore. Suitable for hauling up the kayaks and for sledging, with many large stones suitable for placing the meat on.

Flat stones had been selected for the platform-edge; and for the tent stones, granite of various sizes."

Details regarding the tent-rings are given in the table p. 316—17.

Many bones were found on the tenting-ground. (Dog, polar bear, bearded seal, fjord seal, reindeer (including several antlers), musk-ox (including pieces of skulls)).

Close to the west of tent-ring 611 lay shelter 635;

[1] Magnetic; the deviation here in 1906 was about 4 points to the west; thus true S. W.
[2] (Fig. 50). [3] True N. E.
[4] True south-west winds.
[5] 3—9 meters.

it was originally divided into two parts, but the one has later been used as temporary meat-store (636). The long axis of the ruin lay N. E. — S. W. The south-west part, the shelter, was almost square on the ground, 1·20 M. long and broad, with rounded corners. The doorway faced the south and was 0·30 M. broad. The walls were formed of large stones, among which ordinary stones had been shoved in to tighten the whole. The height was from 0·50 to 0·75 M. The floorplace was covered over with sand and under the sand I found a fire-place (637). The north-east part was oval, 1·20 M. long and 0·60 M. broad. The doorway looked towards the S. E. and was 0·25 M. broad. Apart from the wall common with the shelter (635), large and ordinary stones had been used. An empty, temporary meat-store (636) was now found in this part, very much overgrown with grass and moss. The covering stones were small and round. In the meat-store underneath a broken implement of bone was found. (Fjord seal, musk-ox).

The above-described shelter was so high, that it might well have been used as a tent, with skins to cover it[1].

A row of 4 flat stones (638), 1·40 M. long, was found 1 meter north of tent-ring 601. The stone at the one end was 0·38 M. broad, that at the other end only 0·12 M. broad. Every second stone lay flat on the ground, whilst the 2 others were supported under the one edge by a rounded stone 0·08 M. high, so that their surface was on the slope.

Close to the back wall of the same tent-ring some flat stones had been placed together to form a figure (639); probably by children (fig. 13).

Details regarding the permanent meat-depots:

No.	Form	Length	Breadth	Height	Remarks
640	rectang.	0·80	0·60	0·30	Large stones. Open.
641	square	0·50	0·50	0·40	Large stones. Open.
642	rectang.	1·00	0·60	0·40	Large stones. Not open.
643	rectang.	1·00	0·60	0·40	Large stones. Partly in ruins.
644	rectang.	0·90	0·50	0·40	Well built. Large stones. Open.
645	square	0·40	0·40	0·30	Well built. Ordinary stones. Open.
646	rectang.	0·50	0·40	0·40	Large stones. Open.
647	rectang.	0·60	0·50	0·35	Large stones. Open. (Bean-goose).

Details regarding the temporary meat stores, with exception of the one already described (636):

[1] Cf. MYLIUS-ERICHSEN og MOLTKE: p. 544.

No.	Form	Length	Breadth	Height	Remarks
648	oval	0·60	0·50	0·30	Large stones. Open.
649	oval	0·60	0·50	0·20	Large stones. Open.
650	rectang.	0·60	0·20	0·30	Ordinary stones. Open. (Musk-ox).
651	—	—	—	—	Ordinary stones. Open. Several stones wanting. (Reindeer (antlers)).

The fire-place 652 was found 2 meters S. W. of the tent-ring 615. It was open to the south, 0·25 M. long, 0·20 M. broad and 0·15 M. high. Fire-place 653 lay 20 meters S. S. E. of tent-ring 630. It was open towards the E. N. E. and 0·30 M. square.

A single row of stones (654), consisting of 7 large, rounded stones was found 5 meters north of the tent-ring 614. Its direction was north-south, its length 2·35 M. and the height of the stones from 0·16 to 0·26 M.

The kayaks rests (655) were found 4 meters S. E. of the tent-ring 624; they lay N. E. to S. W. Between the north-east and the middle rests the distance was 1·25 M., between the middle and the south-western 2·00 M. The north-east rest was formed of built-up stones and was 0·50 M. high and 0·60 M. long (in N. W. to S. E. direction) above. The middle rest was built in a similar manner and was 0·50 M. high and 1·00 M. broad (N. E.—S. W.) above. The south-west rest was formed of two stone pillars, 0·50 M. high, which together were 1·00 broad above.

During the work on Foraarsboplads I endeavoured to identify the stone structures mentioned by Mylius-Erichsen and Johansen.

The smaller, permanent meat-depot measured by Mylius-Ericsen is the same as permanent meat-depot 644, and shelter 635 with the temporary meat-store 636 attached is what Mylius-Erichsen described as a permanent meat-depot. The tent-rings are perhaps some of those indicated as "disturbed tent-rings"; I was unable to identify them.

Johansen, in addition to giving information regarding the shelter 635 and temporary meat-store 636, has given the measurements of two tent-rings measured by him; they were probably the tent-rings 609 and 624 measured by me. Further, he had also noticed small collections of stones, resembling broken down fire-places, possibly 652 and 653, as also some stones which were arranged in a short row, probably 654.

Comparing the discoveries at Sælsøen with those here at Rypefjeldet, we obtain some notion of how the time of the earliest Eskimos was occupied.

As already mentioned, I imagine that the Eskimos have lived at Sælsøen in the summer and so much of the winter as their

Fig. 50. Tent-ring. Foraarsboplads. Rypefjeldet.
(Drawing by ACHTON FRIIS).

stores permitted; when these were exhausted they migrated to the coast. It is natural to suppose, that they moved to the winter-houses at Rypefjeldet and lived there during the darkest time of the year, using the moonlight for their seal-hunting at the breathing holes and bear hunting. As soon as the light returned, in the middle of February, the dog-sledges could be brought into use and the area worked over became considerably wider for the hunter.

When the air became warmer, in April and May, and the seals began to come up on the ice, the Eskimos have then moved out of their winter-houses, which would now be unpleasant to live in owing to the water dripping through the roof and the dampness generally.

After moving from the winter-houses, the Eskimos have remained in the tents at Foraarsboplads until the salmon fishing and the musk-ox hunting began at Sælsøen, and the migration to Sælsøen has then taken place. Whilst at Foraarsboplads they have hunted the bear, reindeer and musk-ox, also the seals which they have approached by creeping over the ice. The boys and the older people have now and then been able to aid the supplies with a hare or a bird, and later the eggs of the birds have been searched for. The walrus has scarcely appeared as yet, so that walrus flesh could not be collected into the permanent meat-depots, before the migration to Sælsøen.

This is, of course, only an hypothesis, but it seems to me the most natural manner in which the Eskimos who lived here in the interior of the fjord could have undertaken their migrations.

Mørkefjord (lat. 76° 56′, long. 20° 58′). This fjord is quite a narrow arm of Dove Bugt, which extends in towards the inland ice. At the entrance of the fjord Freuchen found a tent-ring (656), but it was so covered over with snow that it could not be measured.

Væderen (lat. 76° 52′, long. 20° 38′). This rocky mass lies 6—9 kilometers S. W. of Rypefjeldet and here tent-rings and 1 shelter were found.

The shelter (657) was found by the Greenlanders Jørgen Brønlund and Tobias Gabrielsen on the south-east side. The latter gave me the measurements of it, and I let him draw it (Pl. III). On comparing the measurements with the drawing I found that the two agreed; I have no hesitation, therefore, in giving the measurements here. The shelter was oval, 2·00 M. long and 1·50 M. broad. The row of stones was 0·50 M. broad and 0·25 M. high. The stones used were exclusively white (calcspar) (cf. p. 197). It was open towards the east (towards the sea). Jørgen Brønlund obtained the impression, that what he had seen was a sacred spot or a spot consecrated to religious use. I have spoken later with Tobias about the matter and after he had seen other shelters along with me, he was also inclined to believe that it was a shelter. That it was exclusively formed of white stones, has probably had some religious significance.

FREUCHEN found tent-rings (658) at other places on Væderen; round these were bones of bear, walrus and seal.

At the head of the fjords are glaciers. The water in front of these is frequented by bears and marine animals the whole year round and favourable hunting possibilities are to be found here when they are less good at other places.

Carl Hegers Ø (lat. 76° 28′, long. 21° 31′).

Carl Hegers Ø was visited by BISTRUP, who found 2 small tent-rings (659) on the southern point of the island; these were ca. 2·00 M. in diameter, with the doorway facing south. They lay ca. 10 meters from the shore, 3 to 4 meters above the sea.

The fore-land 3—4 kilometers west of the tenting-ground is level and the whole south side of the island is fairly fruitful.

The land was covered with snow in the middle of October 1907 and at the same period open water was seen south of the tenting-ground. In the neighbourhood calving glaciers and both bears and seals were seen.

The remaining islands in the neigbourhood, and the whole western part of Dove Bugt were not investigated ethnographically.

Tvillingøen (lat. 76° 22′, long. 21° 09′). Here 1 tent-ring and 1 fire-place were found.

On Tvillingøen, west of Teufelkap, BISTRUP found a tent-ring (660) built of small, flat stones; the front wall was straight, the back wall rounded; the length was 5·10 M. and the breadth 3·20 M. The distance from the front wall to the platform edge was 2·75 M., from the platform edge to the back wall 2·35 M. The doorway faced the N. E. and was 0·30 M. broad. A large, flat stone lay at the one end of the platform edge. (Fjord seal). Close south of the tent-ring was a large, flat, fixed stone, which had presumably been used for placing meat on. A fire-place (661) was found ca. 10 meters north of the doorway of the tent. The beach opposite the tent-ring was suitable for landing with kayak.

Bælgen (lat. 76° 21′, long. 20° 11′). On a high-lying ground — Bælgen — between Teufelkap and Orgelpiberne, the artists AAGE BERTELSEN and ACHTON FRIIS found some tent-rings (662). In the neighbourhood of these were many, large, frozen-in icebergs in the spring of 1908. The tenting-ground was found on the same island as Orgelpiberne and an excellent view was to be had from it.

All the parts in the inner, western part of Roonbugt were but little investigated ethnographically.

Kap Peschel (lat. 76° 14′, long. 19° 56′). Here 4 tent-rings, 5 shelters, 2 permanent meat-depots, 8 temporary meat-stores and 1 grave were found.

At this place a small, hammer-like promontory on the coast-line is connected with the mainland by a quite low spit of land, the surface of which consists of very fine gravel or pebbles. North of the spit the eastern part of the bay had some screw-ice on the beach, but the western part is quite level. To the south of the spit the ice of the bay is perfectly even; to the north and north-west of the spit there are many grounded icebergs.

On the spit we found 4 tent-rings and 1 temporary meat-store. (Pl. III).

Details of the tent-rings:

No.	Distance and	Direction from	No.	Form	Length	Breadth	Breadth of doorway	Doorway towards	Passage out from tent-ring	Remarks
663	—	—	—	oval	3·67	3·30	0·90	S.	—	1 meter above the sea, 5 meters from beach. Small and ordinary stones.
664	8	N.N.E.	663	oval	3·14	2·94	0·50	S.	—	Small and ordinary stones.
665	5	N.N.E.	664	oval	4·00	3·78	0·62	N.	1·28	Small and ordinary stones.
666	—	—	—	circ.	3·00	3·00	0·42	E. S. E.	—	2 meters above the sea, north side of spit; 50 meters from beach to the north and 20 meters from beach to the west. Small and ordinary stones.

The temporary meat-store (667) was found 5 meters N. N. E. of the tent-ring 663. It was circular, 0·50 M. in diameter and 0·50 M. high, built of small stones.

Apart from the above ruins, not a single trace of Eskimos was left on the whole of the spit, not even a sign of bones. The whole gave the impression of extreme poverty and solitariness.

On a small reef lying off the coast, an oval, temporary meat-store (668) 1·00 M. long and 0·50 M. broad was found. It lay 3 meters

above the sea, 200 meters from the south end of the reef and 10 meters from the nearest beach.

In front of the high land S. S. E. of the spit the foreshore of the bay is ca. 100 meters broad and is completely covered with stones. Round about on this we found 5 shelters, 2 permanent meat-depots, 6 temporary meat-stores and 1 grave. With regard to the relative positions of the ruins and the form and size of the shelters, reference may be made to Pl. III.

Shelter 669 was found ca. 1/2 meter above the sea. The walls were formed partly of separate, single stones, partly of built-up stones and partly of several rows of pointed stones. The west wall was 0·50 to 0·70 M. high. In the east wall was an overturned, triangular stone, which has been ca. 0·60 M. high when in its place. The floorplace consisted of fine gravel.

Shelter 670 was found ca. 2 meters above the sea. The back wall was formed of a compact, double row of stones. Between these was a packing of earth and gravel and their upper edge was on a level with the ground outside the shelter. The floorplace consisted of extremely fine gravel and lay 0·35 M. lower than the upper edge of the back wall. A circular, temporary meat-store (678), 1·00 in diameter was found 5 meters S. W. of the shelter. It was built of large stones.

Shelter 671 was found ca. 3 meters above the sea, alongside an erratic block of gneiss 1·28 M. high, which formed the one wall of the shelter. The remaining walls consisted of single rows of stones of different size. The floorplace was uneven and in the gravel, which covered it, were found many, sharp, small stones. A circular, temporary meat-store (679), 0·50 M. in diameter, formed of small stones, was found 3 meters S. E. of the shelter.

Shelter 672 was found ca. 1 meter above the sea. The walls were formed of a single row of stones, except in the south-eastern part of the rounding, where 2 rows were found in a double layer. The floorplace consisted of uniform gravel and lay 0·35 M. deeper than the ground round about the shelter. A circular, temporary meat-store (680) was found ca. 3 meters further to the S. W.; it was 0·50 M. in diameter and formed of small stones.

Shelter 673 was double and was found ca. 1 meter above the sea. The north wall was 0·57 M. high and formed of 3 layers of stones, outside which stood a row of stones on end. The central wall was 0·34 M. high and consisted of a single row of stones with some few loose stones above. The south and the back walls were both formed of a single row of stones, in the south wall 0·10 M. high, in the back wall 0·34 M. The walls were

compactly and carefully built; the floorplace on the other hand was very uneven.

The 3 temporary meat-stores lying furthest to the north (675, 676 and 677) were 1 to 2 meters above the sea. They were circular, 0·50 to 1·00 M. in diameter and were formed of large stones, which occurred in quantities in the neighbourhood.

The 2 permanent meat-depots (681 and 682) were oval and lay ca. 1 meter above the sea. The walls here were carefully built of, in part, unusually large stones. The one (681) was 1·50 M. long and 0·80 M. broad; the second 1·70 M. long and 1·37 M. broad. The height of both was 0·50 to 1·00 M.

The grave (674) consisted of an empty, stone chamber, which for back wall had an erratic stone boulder ca. 1 M. high. The Greenlanders Hendrik Olsen and Tobias Gabrielsen, when they showed me this ruin, told me that it was a human grave, but I had great doubts about their story as it appeared to me simply a heaped-up mass of stones. I saw later, however, that they were right, as on closer examination I found under a heap of small stones some large covering stones and under these again a regularly built, four-sided stone-chamber, 0·96 M. long, 0·35 M. broad and 0·63 M. high. As already remarked, the chamber was quite empty, containing neither body nor grave-articles, but the grave showed absolutely no signs of having been disturbed.

Along the bay here, just as at the tenting-ground on the spit, no other sign of earlier life was found than just the bare ruins, and here also an impression was borne in upon us of the absolute solitariness and deepest poverty of the human beings, who at one time lived on this spot. The hunters have probably carried on the bear and seal hunting here, far from the settlements; the booty has first been placed in the small meat-stores near the shelters, when the hunters had returned from the hunt for rest, and then afterwards in the 2 permanent meat-depots. These have thus held the common supplies, and were emptied at the time when the hunting station was abandoned.

Paaskenæsset (lat. 76° 10′, long. 19° 50′).

Paaskenæsset is a point ca. 10 meters high, which lies north of Kap Carl Ritter[1]; here 5 tent-rings, 3 temporary meat-stores and 1 structure made by children were found, but otherwise nothing whatsoever of bones, instruments or the like, though the tenting ground

[1] Tent-rings have been found before on the south side of Kap Carl Ritter; see Koldewey: I, p. 488; Peterm. Mitth.: 1871, p. 190 (erroneously called Kap Arendts) and Nathorst: pp. 340—341.

was comparatively free of snow. Round about the Naze enormous masses of ice lie heaped up by the tidal water. Between this place and Kap Carl Ritter lies a large bay, into which flows a river. The land on the north and west sides of the bay is low and flat, well suited for a tenting ground, but was not investigated. A wide valley leads up into the land and perhaps offers possibilities for hunting on land, but the country appeared barren. The situation of the stone remains can be seen from Pl. III.

Dimensions of the tent-rings:

No.	Form	Length	Breadth	Breadth of doorway	Doorway towards	Remarks
683	sector -shaped	3·75	4·75	0·93	E.	5 meters above the sea. Small stones. Passage 0·60 M. long into ring. A fireplace inside doorway (Pl. III).
684	oval	2·50	2·00	0·63	E. by S.	Ordinary stones. A passage 0·75 m. long into ring, ending blindly at a fireplace (Pl. III).
685	oval	3·30	3·00	0·77	E.	4 meters above the sea.
686	circ.	3·80	3·80	1·00	E.	7 meters above the sea.
687	circ.	3·30	3·20	0·50	E.	6 meters above the sea. A fireplace inside and outside the ring. Platform. Niche. (Pl. III).

A small, circular stone-ring (688), formed of ordinary, rounded stones and 0·85 M. in diameter, was probably the work of children (fig. 13). Gravel and pebbles had been scraped to the side, so that the floorplace was to some extent level.

The 3 temporary meat-stores lay 3—5 M. above the sea. They were circular and built of ordinary stones. The measurements were: for 689 and 690, 1·00 M. and for 691 1·50 M. in external diameter.

Vesternæsset (lat. 76° 04′, long. 19° 54′). Here we found 3 tent-rings, 1 shelter, 6—7 temporary meat-stores, 1 grave and 2 other stone-structures.

Regarding this place First-Lieutenant BISTRUP has written in his diary for May 2nd 1908.

"Kap Beurmanns Næs. I found a tent-ring[1] and 2 temporary meat-stores (Hare). The tent-ring and one of the meat-stores[2] lay in the line Haystack on the east point of Depotskæret in Bessels Fjord, ca. 5 meters above the

[1] (692). [2] (693).

sea. The tent-ring is circular, ca. 2 lengths of my lever[1] in diameter. The second meat-store[2] lay east of the tent-ring (probably 100 meters). About 500 meters west of the tenting-ground (the naze) I found a grave[3]. This was oblong, fairly narrow, ca. 30 inches[4], and covered with large stones. The grave was filled with snow, but after some search I found a skull which I took with me. How the body has lain, I could not determine. The main axis of the grave lay west to east".

Furthest west on Vesternæsset, ca. 7 kilometers west of Kap Beurmann, 2 tent-rings, 1 shelter, 4—5 temporary meat-stores and 2 other stone remains were also found (see Pl. III).

The Naze seemed to be somewhat unsuitable for settlement, as it consisted of a great heap of stones with many sharp pieces among them. In February 1908 there was a good deal of snow on the Naze. The shores along the interior of Bessels Fjord were investigated, but no remains were found. The sledging in Bessels Fjord was the best one could wish for; in April and May the sledge-team of the Expedition saw many bears here and JARNER described the locality as a good place for bear hunters.

Both of the tent-rings (696 and 697) were circular, 3·00 M. in diameter. In tent-ring 696 the 0·42 M. broad doorway faced the S. S. W.; to the left of this was a small stone-heap — cooking place — inside the ring[5]; some seal-bones lay here. At the doorway the tent-stones were large, the remainder however were of ordinary size. Tent-ring 697 had large tent-stones and no doorway.

The temporary meat-store 698 was found 30 meters S. E. of the tent-ring 696, ca. 2 meters above the sea. It was circular, 1 M. in external diameter and formed of large and ordinary stones. Near the tent-rings were 3—4 temporary meat-stores (699), but there was no opportunity to investigate these.

Shelter 700 (Pl. III) was found ca. 10 meters above the sea, built on the west side of a large stone boulder. The back wall of the shelter was built up to a height of 0·50 M., but the side walls only consisted of a single row of stones 0·30 M. high.

Just outside the doorway was a small heap of red and white pebbles[6] (701), presumably with some religious significance (cf. p. 197). I took some of these with me for the collections, but unfortunately lost them on the return journey one night as we crossed over the screw-ice on the east side of Store Koldewey.

On the opposite side of the stone boulder a quantity of stones of various sizes (702) had been piled in a heap. I could not understand the meaning of these; possibly they were meant for a grave, but the limited time I had for investigation (we had no food for

[1] Ca. 3·50 M. [2] (694). [3] (695). [4] Ca. 0·80 M. [5] Cf. KNUD RASMUSSEN 2: p. 5.
[6] Cf. KOLDEWEY: I, p. 564 (small heaps of various coloured stones).

the dogs) did not allow me to open the heap sufficiently to be able to find anything in it.

Depotskæret (lat. 76° 03′, long. 19° 51′). Here we found some shelters, 1 trap, 1 cairn and 1 meat-depot house.

In the mouth of Bessels Fjord lie some small islands. In February 1908 as we were sledging down from the north towards the outermost islet, Depotskæret, my attention was at once caught by a cairn (703; Pl. III), which had been raised just by the beach, and as I knew that the place had not been visited earlier by Europeans, it struck me that this cairn must be the mark for something, which had been of importance for the Eskimos who formerly lived and hunted here. The cairn could scarcely have been built by one man, who desired to find the place again for himself, as there was no reason to do so, the position of the islet being so well-marked and the place itself easily found on coming from the north owing to the presence of a conspicuous, large rock standing somewhat isolated further to the east on the islet than the cairn. It was evident, therefore, that the cairn had been built to attract the attention of passers-by. I drove my dogs up the islet and then went up to the cairn to examine it more closely.

It lay ca. 2—3 meters above the sea, about 15 meters from the beach, and consisted of a pointed, triangular stone, which supported by a couple of smaller stones had been placed with the point downwards upon an erratic boulder 1 M. high.

At a distance of about 15 meters from the cairn I found a stone structure (704), built on the south side of a stone boulder ca. 1·50 M. high and long (Pl. III). The floorplace was almost oval, but the large boulder cut off a part of the rounding. The stone wall surrounding the space was so compactly built and solid, that one could not see through it. To show its strength, I may mention that some of the stones at the top were so heavy, that I could not lift them and was obliged to let them slide down in order to make a hole to get into it. The space was half full of snow and I found no doorway, either from the inside or outside, but such may nevertheless have been there.

I imagine that this structure has been a depot, to which the hunters have brought their booty when they could not carry it away with them — and where a hunter could at any time obtain provisions[1]. This meat-depot has had an absolutely permanent character and the place has possibly been a meeting-point for the

[1] Common meat-depot, see STEENSBY: p. 305; KNUD RASMUSSEN 1: p. 43 and 3: p. 44.

hunting excursions, so that the great hunters of different settlements have often come together here.

Higher up on the islet was a trap (705), 0·65 M. long, 0·13 M. broad and 0·20 M. high. The falling door was wanting.

On the north-east side of a large stone boulder we found a shelter (706), formed of a single row of stones. It was 1·10 M. long, 0·68 M. broad and the doorway which faced the N. W. was 0·18 M. broad.

At several places I saw semicircular, low shelters (707), open towards the north. These shelters were ca. 2 M. in diameter and ca. 0·50 M. high and seemed to have been intended for regular use; they were probably closely connected with the visits paid to the depot 704.

As these shelters were built, the place for lying in was on the north side, the windy side; this is very practical[1], since whilst the leeside will be covered with snow after a drift, the other side will be free of snow and thus offer a good lying-place, when a pelt is used for shelter against the wind. This condition was very clearly seen when I visited the place in February 1908.

Stationsø (lat. 76° 02′, long. 19° 57′). Here we found 2 tent-rings, 1 temporary meat-store and 3 fire-places.

On the south side of Stationsø in Bessels Fjord 2 tent-rings were found by Bistrup. They lay just at the beach, east-west from one another, on small loose stones. The one furthest to the west (708) was large, the other (709) comparatively small. In the one there was a good deal of snow in April—Maj 1908. At the western tent-ring was a fire-place (710), probably opposite the doorway; at the eastern 2 fire-places (711), the one just at the side of the doorway, the other a couple of meters south of the tent-ring.

A temporary meat-store (712), circular, 1½ M. in external diameter, was found ca. 10 meters south of the tent-rings.

Kap Arendts Næs (lat. 75° 57′, long. 18° 43′). Here 7 tent-rings[2], 1 grave and 1 cairn were found.

South of Kap Arendts the south end of Store Koldewey runs out in a naze about 20 kilometers long, most probably rocky ground covered with small gravel. Here and there the rock projects through the gravel. The screw-ice drives close past the east side of this naze and large masses of ice are carried round the south point and several kilometers up along the west side, where they

[1] Regarding the Eskimos' understanding of snow-drifts, see Amundsen: p. 243.

[2] Cf. Duc d'Orléans 2: p. 263.

freeze solid. The Naze was only visited by a single sledge-party. I endeavoured to get there myself in February 1908, but owing to various circumstances was obliged to turn back, when apparently but 3 to 4 kilometers from the spot.

According to the information given by JARNER, there are 7 tent-rings here (713), ca. 5 M. in diameter and ca. 18 M. in circumference externally. They lay on the extreme point of the Naze. On the tenting-ground many bones of walrus were found. Between the tent-rings was a stone structure (714), which the Greenlander HENDRIK OLSEN took to be a grave.

This information is based on occasional diary notes, from which we learn further that JARNER, after examining the remains, gained the impression that the whole composed a large settlement.

First-lieutenant TROLLE writes regarding this tenting-ground[1]:

"Before leaving[2] HENDRIK showed us some large Eskimo tent-rings[3], as also a place which he said was an Eskimo burial place[4]".

HENDRIK OLSEN has later informed me, that he also saw a cairn (715) on Kap Arendts Næs.

District VI: The coast between Shannon Ø and Clavering Ø.

Coast north of Haystack (lat. 75° 50′, long. 19° 40′). JARNER writes in his diary, written on the return journey from Ardencaple Inlet, as follows:

"$^{23}/_{5}$ 1908. It has been a long and heavy day. We are now on the islet[5] in Bessels Fjord. Here we have found many fresh tracks of bear, six on the old ice. At one place we saw that the bear had eaten seal, also on the unbroken ice. In passing I saw 2 tent-rings[6], ca. 10 kilometers north of Haystack."

Haystack (lat. 75° 43′, long. 19° 24′). Here JARNER found 12 tent-rings, 2 shelters, 3 permanent meat-depots, 7 temporary meat-stores, 1 fire-place, 1 set of kayak rests and 1 other stone-remain; on these he writes as follows:

"On a flat foreshore along the south side of Haystack we found a large tenting-ground, on which the remains lay in order from west to east[7].

(717). A four-sided, rectangular tent-ring, 2·26 M. long and 2·12 M. broad; the north wall had been disturbed. A small square space outlined in the N. E. corner of the ring. A collection of stones, 0·47 M. square, found in the ring.

[1] "Illustreret Tidende" (Copenhagen) No. 2. 11. Oct. 1908, p. 22. [2] From Kap Arendts Næs. [3] (713). [4] (714). [5] Depotskæret. [6] (716). [7] Now numbered 717—743; for the sake of uniformity these numbers have been added in the text of the diary. (Sketch by JARNER, see Pl. III).

(718). An oval shelter[1], 1·30 M. long, 0·84 M. broad and formed of large stones, some of which (><)[1] stood on end; others (>< ><) had probably fallen down. The height was 0·25 to 0·50 M.

(719). A four-sided, permanent meat-depot, 0·35 M. long by 0·27 M. broad.

(720). A broken-up, oval tent-ring, 3·00 M. long by 1·40 M. broad.

(721). A set of kayak rests, which stood close north of 720, in the direction west to east. Between the western and the middle rest the distance was 2·50 M., between the middle and the eastern 3·60 M. Their height was 0·46 M.

(722). A small, temporary meat-store full of snow.

(723). A disturbed, semicircular tent-ring with straight front wall towards the south. This was 1·75 M. broad and the distance to the back wall was 1·80 M. Inside the tent-ring was a collection of stones, 0·50 M. long and 0·25 M. broad.

(724). A small, permanent meat-depot, consisting of a compactly closed, four-sided, stone chamber, 0·50 M. long, 0·10 M. broad and 0·16 M. high.

(725). A small, temporary meat-store.

(726). A tent-ring in ruins.

(727). A circular tent-ring of small stones, 2·00 M. in diameter.

(728). A large, oval, partly snow-covered tent-ring, formed of small stones, 3·50 M. long and 2·70 M. broad. The doorway was 0·50 M. broad and faced the south.

(729). A snow-covered tent-ring of almost the same size as 728.

(730). A circular tent-ring, 3·00 M. in diameter. In the middle of the ring a couple of lamp-stones.

(731). A small, temporary meat-store.

(732). A shelter formed of very large stones, which lay in a double row. The form was oval, 2·00 M. long and 1·00 M. broad; the stones were 0·30 M. high. The south-west quarter of the oval was absent.

(733). A fire-place, formed of 3 stones and with the opening to the south. It was four-sided, 0·32 M. long, 0·28 M. broad and 0·12 M. high.

(734). A circular tent-ring, 3·00 M. in diameter, with a doorway 0·80 M. broad which faced the north. From this a passage 1·00 M. led out from the ring. The western wall of the passage continued into the ring. Outside the tent-ring there was a small collection of stones close up to the western wall of the passage.

(735). A large temporary meat-store.

(736). A large temporary meat-store.

(737). An oval tent-ring, 3·50 M. long and 3·00 M. broad. The doorway faced the north and quite a short passage led out from it. In the western part of the tent-ring a row of stones formed a space 1·70 M. broad. Inside the doorway to the left there was a collection of stones 0·80 M. long and 0·37 M. broad.

(738). A large temporary meat-store.

(739). A large temporary meat-store.

(740). A circular tent-ring, 2·50 M. square and built of small stones.

(741). A small, permanent meat-depot, 0·30 M. square and 0·15 M. high.

(742). A stone structure in the form of a half-oval. The ends of the curve were 1·70 M. apart and the depth to the rounding was 1·30 M. Only half a meter from the N. E. end of this was a curved row of stones ca. 1·10 M. long. In this case the curve was 0·43 M. broad across the mouth. In these 2 rows of stones and also inside them were many white pieces of quartz[2].

[1] See Pl. III. [2] Cf. p. 197.

(743). A small tent-ring, formed of flat stones and with flat lamp-stone in the middle of the ring."

Hochstetter's Vorland (lat. 75° 28′ long. 19° 27′). About 30 kilometers south of Haystack, Hochstetter's Vorland is cut through by the bed of a large river. Off this part of the land there is unbroken ice many years old, but both seals and bears were seen on this old ice. On the flat beach north of the river-bed JARNER found an oval tent-ring (744), formed of ordinary stones, ca. 3·00 M. long and ca. 2·50 M. broad. The doorway was in the long axis of the tent-ring.

Muschelberg (lat. 75° 09′, long. 19° 51′). Here 1 tent-ring, 2 shelters, 1 trap and 1 row of stones were found.

Muschelberg lies furthest to the south on Hochstetter's Vorland. On the eastern top of the hill, ca. 300 to 400 meters above the sea, JARNER found a very large trap[1] (745), which was estimated to be externally 0·75 M. high and 1·50 M. broad at the base. It was not built on rock, but on soft ground, and to prevent the booty from getting out, the Eskimos here, instead of paving the bottom as at other places, had piled up so many stones both above and round about the trap, that it was impossible for the animal to dig its way out. The stone-heap was so large, that JARNER was obliged first of all to take away a number of them before he could see that it was a trap.

On the flat top above the trap was a row of ordinary stones (746) extending like a string for 4 to 5 meters with ca. 0·20 M. between the stones.

Between the two parts of Muschelberg there is a river-bed whose direction in the main is from north to south. It opens on the south side of Hochstetter's Vorland. A circular tent-ring (747), ca. 4·50 M. in external diameter was found on the beach west of the mouth of the river[2]. Near the tent-ring were 2 shelters, one of which was of very unusual size, ca. 3 M. long (748). It was built of 4—5 layers of large stones up to a height of over 1 M. in the middle and gradually sloping towards the ends. Its long axis was parallel to the river and it formed a curve to the east, so that the lying-place was on the west side. From the shelter, which was but little conspicuous, there was an excellent view over the bed of the river and the hunting country over the south slope of Muschelberg[3]. The second shelter (749) was much smaller.

[1] See further description KOLDEWEY: I, p. 571. [2] See also KOLDEWEY: I, pp. 571, 576. [3] Cf. BACK: pp. 177, 187; LYON: pp. 71, 198; PARRY: p. 234; MC. CLINTOCK: p. 279; STEENSBY: p. 304; G. HOLM 2: p. 84; 3: pp. 296, 319; KNUD RASMUSSEN 1: p. 97.

Kap Buch (lat. 75° 08′, long. 19° 29′). On the north side of Kap Buch in Ardencaple Inlet JARNER found 2 shelters (750) on an old beach-terrace, ca. 3 meters above the sea and near the present shore-line. They were small, intended for one man only.

In the interior of Ardencaple Inlet the shore has steep sides at several places and no stone remains were found here.

West side of Shannon Ø (lat. 75° 09′, long. 18° 52′ (estimated)). On the west shore of Shannon Ø GUSTAV THOSTRUP's sledge-expedition found a stone-structure (751) on the south side of a large stone ca. 1 M. high. It was measured and drawn by CHARLES POULSEN (Pl. III) and found to be rectangular, 2·25 M. long in the direction east to west and 1·75 M. broad. The stones of the west wall lay in a double row, probably disturbed. The east and south walls were remarkably straight and the stones seemed to have been carefully chosen. They were everywhere 0·30 M. long, 0·15 M. broad and 0·10 M. high. The floorplace was covered by coarser shore-gravel, which had been levelled with care. It seemed to lie somewhat higher than the surroundings. There was no doorway to be found in the structure, which lay ca. 75 meters from the beach and ca. 3 meters above the sea.

The stones have now been moved from their previous position, as they were used for the tent of the sledge party.

Kap David Gray (lat. 74° 58′, long. 18° 31′). This Cape bounds Freeden Bay to the west[1]. Here 4 winter-houses, 1 trap, 2 temporary meat-stores and 1 grave were found.

In Freeden Bay there is a tendency to the formation of channels with thin ice or open water throughout the whole year, which conditions are probably good for the hunting. In November 1906 the sledge-team of MYLIUS-ERICHSEN found open water in these parts. At New Year 1907—08 GUSTAV THOSTRUP's sledge-party met with large stretches of open water here, but they got no chance to shoot bear or seal, though they remained a month on Bass Rock. At

[1] The summer settlement belonging to these winter-houses lay somewhat further east in Freeden Bay, where tent-rings and children's structures (small heaps of various coloured stones and small tent-rings) were found; see KOLDEWEY: I, pp. 563—64. Regarding the other remains on Shannon Ø, see KOLDEWEY: I, pp. 330—31, 598—600, 635 (not winter-houses, cf. p. 598), 641 and THALBITZER: p. 333 ("Shannon Island" in the table only embraces "Kap Philipp Broke Peninsula"; no winter-houses were found here (cf. KOLDEWEY: I, pp. 330, 598, 635).

the end of April 1908, on the other hand, Jarner's party saw seals on the ice and many bears.

The remains were found on a point west of the Cape, except for the one winter-house (758). The investigation of the settlement was made by Jarner, but Hendrik Olsen brought me some supplementary measurements. These were made partly by means of a gun and partly by stepping the distances. The distance between the houses 751 and 752 was ca. 17—18 meters, the direction N. N. W. to S. S. E. At the houses the ear of a seal, some reindeer antlers and an underjaw (fox?) projected up out of the snow. The house-spaces were much covered with snow and in one of them Jarner dug down 1 M. at several places without finding anything but snow, — even along the walls, so that he obtained the impression that the roof of the house had been removed.

The following table gives the measurements:

No.	Distance from beach	Height above sea	Length from passage to back wall	Breadth along front wall	Breadth of passage	Direction of passage
752	50	10	4·50	4·50	1·00	S. S. E.
753	—	—	4·50	4·50	1·00	S. S. E.
754	—	—	3·80	2·85	0·45	S. S. E.

All the measurements were made above the fallen-in houses.

The 2 temporary meat-stores (755) were found between the winter-houses and the shore.

A trap partially in ruins (756) was seen N. E. of the winter-houses; it has been 0·30 M. broad and 0·15 M. high.

East of the trap lay a grave (757) in a somewhat lower position. A large stone formed its east wall. At the other sides is consisted of a semicircular, arched stone-box, built of large and ordinary stones. Above the head end lay a specially large stone, obviously the last one placed on it as a lid. The skull lay at the north end of the grave. The face looked to the west, the top of the skull towards the north, the first vertebrae and the ribs in a corresponding position, but a little crooked as if the face had been turned to the side to look down towards the winter-houses. The rest of the skeleton was frozen into the ground and could not be examined. There was so much earth in the grave, that it seems as if this must have been placed in it and packed down over the body. The grave was not sufficiently long that the body could lie straight out.

Between this settlement and Kap David Gray itself, only 2 to 3 kilometers west of the Cape, another winter-house (758) was found in December 1907 by Gustav Thostrup, Tobias Gabrielsen and Hendrik Olsen, but owing to the dark they were unable to investigate it closely. They considered it to be less in ruins and younger than the winter-houses on the east shore of Stormbugt (313 to 315 and 317 to 319). Above the fallen-in roof were found 2 narwhal skulls, the teeth of which had been removed.

Conclusion.

In conclusion I shall endeavour to bring together the general impressions I have gained from these earlier Eskimo settlements in North-East Greenland. In doing so, I may remark, that the study of the conditions in the Kap Bismarck district, were the chief work of the Expedition lay, will form the basis of the following almost exclusively.

Age of the settlement. To form any idea of how long a period the occupation of these regions has extended, is indeed almost impossible, but I venture to think that, to calculate in any way rightly, we must use fairly high numbers.

From a consideration of the appearance of the winter-houses, I think we can distinguish between three different periods of settlement. Between the oldest and the second period, to judge from the ruins, there has been a long stretch of time — several hundred years! But between the second-last and the latest period the difference in age has not been nearly so great.

No winter-houses have been found, which might form the transition between the different periods; on the contrary, the boundaries are even very sharply marked, as already indicated in describing the various remains. It need only be repeated here quite briefly, that the oldest winter-houses are those which are only indicated by a slight elevation of the ground where the walls have formerly stood (fig. 37); in the houses of the second-last period the roof has fallen in and the walls, though still standing, are covered with vegetation and earth (fig. 28); while the houses of the latest period are but little fallen in, and the passage and house-room are not yet filled up or overgrown with vegetation (fig. 44).

To the oldest period belong the houses: No. 4 on Sophus Müllers Næs, 9 on Eskimonæsset, 66, 68—72 on Syttenkilometernæsset, 392, 393, 398—405, 408 on Snenæs and 521 on Rypefjeldet.

To the second-last period belong: 130—135 on Renskæret, 140—144 on Maroussia, 313—315, 317—319 on the east shore of Stormbugt and 522, 527, 528 on Rypefjeldet.

To the latest period belong; 406, 407 on Snenæs and 523, 524 on Rypefjeldet and probably 752—754, 758 on Kap David Gray.

Some of the tent-rings had an ancient appearance, as for example the tent-rings on a rocky islet in Stormbugt (367—369), the tent-rings at Sælsøen (477, 478, 483—490 and 517) and the tent-rings at Foraarsboplads on Rypefjeldet (599—634); this would seem to indicate, that only the Eskimos of the oldest period have had the opportunity to carry on the musk-ox hunting at Sælsøen on a large scale; no recent tent-rings were found here, namely, nor any other recent remains, except perhaps a single temporary meat-store (473), the age of which was doubtful. The tent-rings 29, 30 on Rosio and 218, 225, 247, in the neighbourhood of Danmarks Havn were of the older type (367—369).

The later tent-rings were mostly found on the coast and on the shores of the fjords, which shows that the later Eskimos have been closely bound to the sea as their hunting ground. Yet they have also captured reindeer and a few musk-ox, as can be seen from the contents of the refuse-heaps. Their weapons and apparatus appear to have been made for a great part of reindeer antlers, but even at the present day so many antlers of reindeer lie scattered everywhere in the country round about Kap Bismarck, that there is plenty of material for weapons and instruments there, and it is difficult to say, therefore, whether the Eskimos have simply utilized what they found lying about or the antlers of animals they themselves have killed. No reindeer are found in the district now.

Some observations make it possible perhaps to estimate the approximate period at which the Eskimos occupied the regions investigated by us.

That the Eskimos have engaged in whale-fishing can be seen from the discovery of the bones and whalebone of whales, and also from the apparatus made of whalebone. The bones found can hardly be referred all to "drift-whales", but even so there is probably only one period in recent centuries during which whales have occured at the coast so far north as the 77th degree of latitude, and this period, I believe, was before or about 1700[1], when the strenuous fishing caused the whales to seek in among the pack-ice

[1] Cf. ZORGDRAGER: pp. 126, 290, 310, 361 and BRUUN: pp. 249—51.

in order to escape their pursuers. It seems possible to conclude that this period corresponded with the best period of the Eskimos' whale fishing at the coast, and — comparing this with the discoveries — it was the second-last group of Eskimos, or the one before the most recent, which then occupied the land.[1]

Regarding the period for the oldest settlement of the Eskimos in this district, I believe that this goes so far back, that our knowledge of the ice-conditions and of the distribution of the marine mammals at that time is extremely small. Regarding the presence of the land mammals in the aforesaid time we know, nevertheless, that the musk-ox has lived here, as we have found the bones in the sand-buried, permanent meat-depots at Sælsøen and like other expeditions[2] we have also found very old, quite fossilized skulls of the musk-ox.

In connection with the above-mentioned I may cite Fridtjof Nansen:[3]

"Voyage to Baffins Bay 1267. Regarding the voyage about 1267 it is said by Bjørn Jónsson (taken from "Hauks Bog" according to his statement, but not to be found there now): "This summer (that is 1266) as Arnold the priest was crossing from Greenland, and they were wrecked on Iceland at Hitarnæs, pieces of wood were found out in the sea, which had been shaped by small axes or adzes (þexlum), and among these was one piece in which was found wedges of teeth or bone." — As these pieces of drift-wood must have been transported by the East Greenland polar current, this would seem to indicate that there were already Eskimos on the east coast of Greenland at that time. As it is noted as something remarkable, these pieces of wood with wedges of teeth or bone, could not have originated from the ancient Scandinavians either on Iceland or Greenland. The shaping of the wood by means of "small axes" or "adzes" (Eskimo weapons) has seemed foreign."

Further it may be remarked that a flint-scraper of considerably older type than the other apparatus found was discovered near the very old winter-houses 521.

Regarding the period of the most recent occupation by the Eskimos, I may mention that Mylius-Erichsen estimated, that about 50 years must have passed since the Eskimos had last lived here (p. 290). Such an estimate rests naturally to a great extent on individual opinion; but I may add, that on this point I hold the same belief as Mylius-Erichsen and am even inclined to

[1] Whilst touching upon the European whale fishing here, I may just remark that the journals of the old whale fishers might possibly be able to give us some information on many points of importance for judging of the natural conditions under which the natives of North-East Greenland have lived in those early times, and especially regarding the second-last period of occupation. [2] Cf. Nathorst: pp. 144—45, 257 and Kolthoff: p. 27. [3] Cf. Fridtjof Nansen: pp. 234—35 and Note (cf. Hauks Bog, Grønl. hist. Mind. III, pp. 238—41 (cf. p. 244)).

go further and say, that the most recent winter-houses on Snenæs and Rypefjeldet have been occupied at the time when the sledge-party of Captain KOLDEWEY visited Stormbugt (Kap Bismarck) in April 1870.

After my return from the Danmark Expedition I learnt that the Museum investigations of Dr. O. SOLBERG[1] had given the result, that the settlement in North-East Greenland is of comparatively recent date. I can quite well understand how this result has come about, but I am nevertheless of the opinion, that the question can only be considered as definitely settled, when a sufficient number of the oldest — ancient — winter-houses in East Greenland have been closely examined. The fact is, indeed, that so much haste is made on expeditions to collect as much as possible in the often very limited time, that the places most easy of approach and which promise the most are always attacked the first, and these are in by far the most cases the most recent and least delapidated ruins; consequently, the objects brought home to museums are almost exclusively of recent date.

Unfortunately, the great importance of investigations on the very old, but little promising ruins has only occurred to me too late. Such an investigation was however planned, but the time never permitted me to carry it out, because the Expedition left Greenland in the early part of the summer of 1908.

Position of the spring, summer and winter settlements in relation to one another. The spring and summer settlements in the Kap Bismarck district, with but few exceptions, lie so close to the winter settlements, that they may practically be considered to be in one locality. Owing to the comparatively narrow stretch of ice-free land, we do not find here that the Eskimos have undertaken annual migrations into the land and back again to the coast. At Rypefjeldet we find an exception, however; as already mentioned, such a migration has occurred here.

Oldest settlement. At Syttenkilometernæsset the settlement has been occupied the whole year round, but from here the natives have also visited the east coast of Germania Land.

From Snenæs the Eskimos have migrated in the spring to Stormnæs and its surroundings, which only meant a journey of half a score kilometers over even ice. In summer they have also lived on Snenæs itself.

The settlements at Sælsøen and on Rypefjeldet have already been discussed (pp. 291—92, 294—95 and 320—21).

[1] Cf. SOLBERG: pp. 17—19.

Settlement of the second-last period. The outer coast of Germania Land from Syttenkilometernæsset and further north has only been occupied on the hunting excursions of spring and summer. Renskæret, Maroussia, east shore of Stormbugt and Rypefjeldet have been occupied the whole year round.

Last or youngest period. A couple of families have lived together on Snenæs and Rypefjeldet at practically the same spot throughout the whole year and have at last succumbed in the terrible struggle for the maintenance of life. The few left have gone in search of more friendly regions, but have now also disappeared.

The numbers of the natives during the different periods can best be judged from the number of the winter-houses of the same age in a district. In District V we have the following result: oldest period 32, second-last period 20 and the last period 4 winter-houses. Even though all the winter-houses have probably not been occupied at the same time, these numbers give some notion of the relative proportions in the different periods.

In considering the nature of these regions, we can well understand that the number of natives has never been large.

Culture. We have only to think of the natural conditions prevailing in these regions, to realise, that sledging must have attained a very high degree of development among the natives.

The well-made boat rests (figs. 21 and 29) show further that the kayak and women's boat have both been known to the second-last Eskimos. According to measurements the first especially were remarkable for their great length. The fact that great care had been used in the building of the boat-rests in this district, though there is solid ice everywhere nine months of the year, shows that these boats have been of value, and we may believe that the stage of development of the boats corresponded closely to the excellence of the boat-rests.

Both the women's boat and the unusually long kayak have undoubtedly been due to some influence from the subarctic regions.

From my personal knowledge of the district, both of the open water and the ice, I can well understand that these natives must have been both good steersmen of the women's boat and excellent drivers of the sledge. The latter arise where the ice-covering remains for a long time, as here; and with regard to the former I may mention, that the waters of this region (south of lat. 77°) are either open, so that a little swell makes a good deal of wash, or narrow and filled

with heavy, driving ice, both of which conditions demand great skill on the part of the steersman.

The unfavourable conditions of life, which the land and sea offer, have compelled the Eskimos to utilize every possible chance of hunting, and this has developed their skill in the management of the means of transport.

Lines of immigration. Assuming that the Kap Bismarck district has witnessed three different periods of immigration, two of which must be considered as occurring independently, with an interval of hundreds of years, the question arises, whether these two streams have followed the same or opposite lines of immigration along the east coast of Greenland.

Oldest Eskimos, 1st immigration. The winter-houses belonging to this age were found in the Kap Bismarck district, on Eskimonæsset and on Sophus Müllers Næs, whereas they have never been mentioned by the investigators who have examined the land south of lat. 75° and we may perhaps conclude from this, that houses from the oldest period are only to be found in the Kap Bismarck district and north of this, which would indicate an immigration of the oldest Eskimos from the north.

There is the possibility, however, that these ancient, but little conspicuous ruins have remained unnoticed in southern regions, where also the vegetation is greater, though they have actually been there. The reason for this, is, that they are so much broken down to the level of their surroundings, that only the purest chance will reveal them to the investigator, and even a quite ordinary vegetation will easily conceal their presence completely. I believe, indeed, that the little vegetation in the regions visited by us has been of considerable assistance in discovering these old ruins.

Consideration of the bones found by us shows, that the oldest Eskimos at Sælsøen have carried on the musk-ox hunting on so extended a scale, that we may conclude that the principal land hunting of these Eskimos has been concerned with the musk-ox. Concluding from this, that these Eskimos have followed the musk-ox in their migrations, this would also indicate that the oldest Eskimos have migrated to the east coast of Greenland round the north of the land[1], as the musk-ox on the north-west coast of Greenland have never been seen to the south of Cape Alexander[2].

It may be remarked, that the set of kayak rests (655) found on the older tenting-ground, Foraarsboplads, seemed to have been intended for a broad, small boat, and that they were quite different

[1] Cf. STEENSBY: pp. 396, 400. [2] Cf. STEENSBY: p. 277.

from the excellent rests elsewhere. We may believe, that the clumsy boat connected with these rests has been constructed by Eskimos who have come from the north and gradually forgot the elegant construction of the kayak.

Eskimos of the second-last period, 2nd immigration. The winter-houses of this period, which are comparatively speaking very prominent against the naked surrounding country, were not found north of the Kap Bismarck district, but they were found along the whole of the coast south of this, as far as to the regions now dwelt in. As no transitional stages of houses were found between the oldest and the second-last group, we may conclude, until evidence of the existence of ruins of the latter period north of lat. 77° is forthcoming, that the winter-houses suggest an immigration from the south of the Eskimos of the second-last period; especially as these in their migrations along the east coast of Greenland have never reached further north, than lat. 77° (whereas their winter-houses — as mentioned above — are not found more northerly).

We may suppose, that the younger houses will be the more easily seen — the more readily found — than the older, which must really be searched for, but there is the possibility nevertheless, that in the inner fjords of the northernmost districts more recent houses may be found, since the districts best investigated lay along the coasts, where as already remarked only ancient houses were found; this possibility seems to me, however, a very slight one.

In connection with the above mentioned, I may state that in the second-last period it has been the custom to bury the dead, a custom which can be traced from Kap York southwards along the west coast of Greenland, round Kap Farvel and up along the east coast to lat. 77°; north of this no graves have been found.

The bones found at the more recent settlements show, as already mentioned, that the natives belonging here have hunted the reindeer and been more closely connected with the hunting of the marine animals. Reindeer antlers were found in great quantities in the Kap Bismarck district, whereas they are not known to occur north of lat. 78°. I have asked our voyagers from the regions north of Jøkelbugten, if they had found reindeer antlers there, but the answer has been in the negative for both Greenland and Peary Land. This is very remarkable, when we consider the enormous numbers of reindeer antlers we found scattered everywhere in the regions south of lat. 78°. Nor were reindeer bones brought home among the bones from Eskimonæsset (though musk-ox bones were among them), and neither Mylius-Erichsen nor Brønlund mention having found them to the north. It seems almost as if the reindeer

has never lived in North-East Greenland north of Jøkelbugten, and if the Eskimos of the second-last period have been specially reindeer hunters, this fact will naturally have great importance in connection with the theories of immigration, assuming of course that these Eskimos have followed the movements of the reindeer herds northward along the east coast of Greenland to lat. 77°—78°.

The near relationship which the second-last Eskimos have had to subarctic culture (women's boats and kayaks) seems also to suggest, that their immigration has taken place from the south; we can hardly believe either, that the Kap Bismarck district, with its icy covering for three quarters of the year, would give rise to a distinctly subarctic culture among a sledging people coming from the north. On the contrary, the natural conditions here are such, that a race coming from the south would rather change over from a subarctic to an arctic culture at this place.

In the district still inhabited, Angmagsalik, we know only from tales that some of the natives there have journeyed towards the north, and in one case[1] we can follow these to their destruction, but at another place[2] we read that

"the posterity of those natives, who journeyed northwards from Angmagsalik, have passed over Kangerdlugsuak and proceeded further north, where they perhaps still live."

The last or youngest Eskimos, 3rd immigration. The most recent inhabitants of the Kap Bismarck district can hardly be said to represent an independent, new immigration, because they only include a couple of families.

Summary. Without going any deeper into the subject of the possible lines of immigration, I may in concluding just summarize the following, actual conditions:

(1) Kap Bismarck district has been occupied at three separate times, with a very long interval between the two first.

(2) The oldest Eskimo winter-houses are only found north of lat. 77°.

(3) The younger Eskimo winter-houses are only found south of lat. 77°.

(4) No winter-houses are found, which form the transition between the oldest and the younger winter-houses.

(5) The later Eskimos have had the custom of burying their dead, whilst no graves have been found from the period of the oldest Eskimos.

(6) The oldest Eskimos have carried on the musk-ox hunting at Sælsøen on an extensive scale.

(7) The later Eskimos have hunted the reindeer.

[1] Cf. HOLM 2: p. 56; AMDRUP 1: pp. 93—95, 253; AMDRUP 2: pp. 291, 296, 303—11 and THALBITZER: p. 342. [2] HOLM 1: p. 222.

(8) Reindeer antlers and reindeer bones are not found north of lat. 78°, whilst they are found in quantities further south.

(9) The later — especially the second-last — Eskimos have had women's boats and kayaks.

(10) In the Kap Bismarck district the passable sledging-ice persists for about three quarters of the year.

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TABLE I.

Table of the Eskimo settlements and stone-remains found by the Expedition, arranged in order.

The charts prepared by the Expedition (see "Meddelelser om Grønland" XLVI) also show where ethnographic discoveries were made.

TABLE I.

District	Place	Latitude N.	Longitude W.	Winter-houses	Tent-rings	Shelters	Traps	Permanent meat-depots	Temporary meat-stores
I	Kap Peter Henrik	82°00′	25°10′	.	1				
II	W. of Kap Holbæk	80°50′	26°50′	.	.	.	3	2	
III	Sophus Müllers Næs	80°49′	14°25′	4	5	.	. .	.	6
	Eskimonæsset	80°26′	15°48′	9	7	.	.	.	8
	Fældestrand	80°19′	16°12′	.	10	.	11		
IV	Kap Philippe	77°38′	17°45′	.	.	.	13	12	
	Kap St. Jacques	77°36′	18°12′	.	14-20	.	.	.	21-25
	Kap Amélie	77°31′	19°12′	.	.	.	28		
	Rosio	77°18′	18°25′	.	29, 30, 32	.	.	.	31
V	Thomas Thomsens Næs	77°11′	18°14′	.	34, 40-48, 52	33	38	55, 56	53, 54
	Kap Steensby	76°55	18°15′	.	58, 60	.	.	.	57
	Hunting ground N. of Syttenkilometernæsset	76°51′	18°20′	.	.	63	61, 62	64, 65	
	Syttenkilometernæsset	76°49	18°21′	66, 68-72	73-76, 78, 80-82, 84, 86, 105, 106	.	.	67, 79, 83, 87-91	92, 94, 103, 104, 107
	Betw. Syttenkilometernæsset and Øksebladet	—	—	.	108	.	110	.	109
	N. W. of Øksebladet	76°46′	18°28′	.	111				
	Ørnens Ø	76°44′	18°30′	.	.	.	112		
	Kap Udkiggen	76°43′	18°29′	.	113	.	.	.	114
	Kap Bismarck	76°42′	18°35′	.	115	.	.	116-118	116
	Renskæret	76°41′	18°34′	130-135	129	125, 128	.	124, 126	127
	Maroussia	76°40′	18°33′	140, 144	145	.	.	146	146
	Kap Christian	76°37′	18°38′	.	.	.	148, 149		
	Sonja Havn	76°37′	18°39′	.	.	.	152	.	.
	Rocky islet at Lille Koldewey	76°39′	18°41′	.	.	.	.	.	153, 154
	Danmarks Havn with immediate neighbourhood	76°46′	18°45′	.	155, 158-160, 181-187, 192-194, 196, 198-200, 206-208, 212, 213, 218-226, 231, 239, 244, 247, 249, 251-258, 263	161, 177, 195, 203, 215, 262	165-169, 171-176, 180, 240, 264	156, 178, 190, 209-211, 216, 235-238, 243	162-164, 188, 189, 191, 201, 202, 205, 217, 230, 233, 241, 242, 245, 246, 250, 259, 265-267
	Baadskæret	76°45′	18°51′	.	283, 285, 288, 293-295, 298-302	.	271-282, 290	268-270, 286, 287, 292, 308	284, 289, 291, 296, 297, 305, 307, 309
	Kap Helgoland	76°43′	19°10′	.	310, 311	.	.	.	312

Fire-places	Refuse places	Graves	Receptacles at graves	Remains of children's playthings	Rests for women's boats	Rests for kayaks	Cairns	Hollow cairn	Depot house	Hare barrier	Stone ovals	Built-up stone circles	Store or dwelling	«Stone table»	Permanent whale-flesh depot	Ruins of buildings	Four-cornered stone-remain	Other stone-remains
.	.	.	.	.	.	.	27	.	.	.	.	.	.	26				
49, 50	.	.	.	.	.	35, 36, 37	.	.	.	.	.	.	.	.	.	.	.	39, 51
77, 101, 102	.	.	.	.	.	93, 95, 96	.	.	.	.	.	.	.	.	97-100	.	.	85
122	.	.	.	.	.	.	.	123	.	.	.	.	119	.	.	120, 121		
139		.	.	.	136-138													
.	147																	
.	.	.	.	.	.	.	.	.	.	.	.	150						
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	151
157, 197, 228, 229, 232, 234, 248, 261	.	.	.	179	.	260	170	.	.	214	.	.	.	.	.	.	.	204, 227
303	.	.	.	.	.	304												

TABLE I (continued).

District	Place	Latitude N.	Longitude W.	Winter-houses	Tent-rings	Shelters	Traps	Permanent meat-depots	Temporary meat-stores
	E. shore of Stormbugt	76°47′	18°52′	313, 315, 317-319	328, 330-335, 337, 338, 341-355	.	327, 357	316, 320, 340, 358	320, 340. 356
	Head of Stormbugt	76°49′	19°09′	.	363	362	361	359, 360, 364	
	Rocky islets in Stormbugt	—	—	.	367-370	371-374	366	.	365, 375
	Stormnæs	76°48′	19°12′	.	379-383	384, 387, 390, 391	376-378, 389	385	380, 382. 386, 388
	Snenæs	76°49′	19°21′	392, 393, 398-408	396, 409-415	416, 418	425-436	394, 395, 419, 421	397, 421
	Farsunds N. E. coast	—	—	.	.	.	437		
	Lumskebugten	76°55′	19°49′	.	.	438-441, 443-446, 448-451	.	442	447
	Bastionerne	76°56′	20°11′		.	452			
	Mouth of Lakseelven	76°55′	20°10′	.	454, 455	453	.		.
	Beach W. of Hvalrosodden	76°56′	20°16′	.	458, 459	.	460	.	.
	Sælsøen	76°58′	20°14′ 20°16′	.	477, 478, 483-490, 517	499	500-502	461-471, 503-516	472-475
	Rypefjeldet	76°56′	20°22′	521-524, 527, 528	546-557, 599 634	563-574, 635	532-534, 588-597	526, 535-542, 581-587, 640-647	526, 558, 559, 575-580, 598, 636, 648-651
	Mørkefjord	76°56′	20°58′	.	656				
	Væderen	76°52′	20°38′	.	658	657			
	Carl Hegers Ø	76°28′	21°31′	.	659				
	Tvillingøen	76°22′	21°09′	.	660	.	.	.	.
	Bælgen	76°21′	20°11′	.	662				
	Kap Peschel	76°14′	19°56′	.	663-666	669-673	.	681, 682	667, 668, 675-680
	Paaskenæsset	76°10′	19°′50	.	683-687	.	.	.	689-691
	Vesternæsset	76°04′	19°54′	.	692, 696, 697	700	.	.	693, 694, 698, 699
	Depotskæret	76°03′	19°51′	.	.	706, 707	705	.	.
	Stationsø	76°02′	19°57′	.	708, 709,	.	.	.	712
	Kap Arendts Næs	75°57′	18°43′	.	713	.	.	.	.
VI	Coast N. of Haystack	75°50′	19°40′	.	716				
	Haystack	75°43′	19°24′	.	717, 720, 723, 726-730, 734, 737, 740, 743	718, 732	.	719, 724, 741	722, 725. 731, 735. 736, 738, 739
	Hochstetter's Vorland	75°28	19°27′	.	744				
	Muschelberg	75°09′	19°51′	.	747	748, 749	745	.	.
	Kap Buch	75°08′	19°29′	.	.	750			
	W. side of Shannon Ø	75°09′	18°52′	.	.	.	.	.	.
	Kap David Gray	74°58′	18°31′	752-754, 758	.	.	756	.	755
	In District I—VI: 56 Places with:			62	more than 272	more than 63	more than 81	more than 122	more than 131

Fire-places	Refuse places	Graves	Receptacles at graves	Remains of children's playthings	Rests for women's boats	Rests for kayaks	Cairns	Hollow cairn	Depot house	Hare barrier	Stone ovals	Built-up stone circles	Store or dwelling	«Stone table»	Permanent whale-flesh depot	Ruins of buildings	Four-cornered stone-remain	Other stone-remains
.	.	321, 323, 325, 326	322, 324	329, 336, 339														
381																		
.	.	422-424	.	417, 420														
.	.	.	.	456														
.	.	.	.	.	.	.	457											
476, 480	.	.	.	518, 519	.	.	.	.	.	.	479, 481, 491-498	.	.	.	.	.	.	482, 520
544, 560, 562, 637, 652, 653	.	529	530, 531, 545	561, 639	.	655	.	.	.	.	.	.	.	.	.	.	.	525, 543, 638, 654
661																		
.	.	674																
.	.	.	.	688														
.	.	695	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	701, 702
710, 711	.	.	.	.	.	.	703	.	704									
.	.	714	.	.	.	.	715											
733	.	.	.	.	.	721	.	.	.	.	.	.	.	.	.	.	.	742
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	746
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	751	
.	.	757																
more than 33	1	12	5	12	6	7	6	1	1	1	10	ca. 10	1	1	4	2	1	more than 16

TABLE II.

Table of the Eskimo settlements and stone-remains on the East Coast of Greenland, North of Angmagsalik district, which have been investigated and described by other expeditions, with the literature connected therewith.

The numbers indicate the pages in the work cited where information can be found regarding the settlements and stone-remains.

"0" indicates that the remains in question do not occur at the place.

At the following places the investigations have given a negative result:

Mountnorris Inlet (lat. 72° 16′, long. 22° 15′): No remains (cf. SCORESBY 1: p. 265).

Fame Øer, largest island, east side (lat. 70° 49′, long. 22° 29′): No winter-houses (cf. NATHORST p. 221).

Turner Sound (lat. 69° 44′, long. 23° 33′): No remains (cf. HARTZ: p. 160).

Eskimo remains should be sought for at the following places:

Stewart Island, S. E. point: see KOCH: p. 279; further according to letters (of 13. March 1905 and 15. June 1906) from Prof. A. G. NATHORST to MYLIUS-ERICHSEN:

"Franz Josephs Fjord: Several undisturbed Eskimo settlements (e. g. inside Kap Franklin; ruins of a house on a point in Isfjord (Renbugt) have not been completely dug out).

The fjords west of Clavering Ø: Here, probably, undisturbed Eskimo settlements will be found.

Kap Simpson: Probably a good region for ethnographic investigation."

TABLE II.

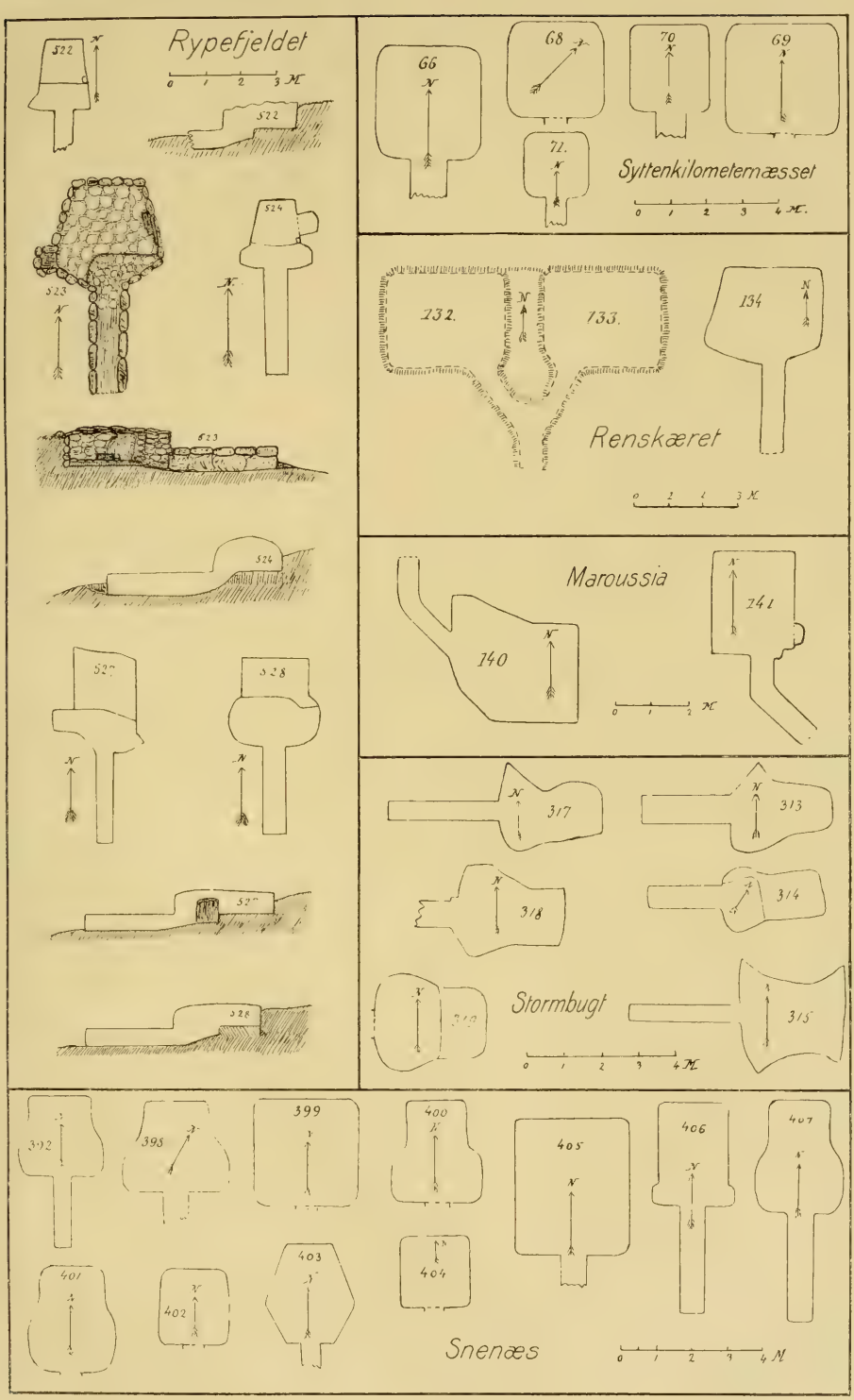
Places	Latitude N.	Longitude W.	Winter-houses	Tent-rings	Graves	Other stone-remains	Clavering	Sabine	Petermanns Mittheilungen 1870	do. 1871	do. 1965	Pansch	Koldewey I
Kap Philippe	77°38′	17°45′	0	0	0	ca. 9	.	.	.	.	216*	.	.
Kap St. Jacques	77°36′	18°12′	0	7	0	7	.	.	.	.	.	.	.
Syttenkilometernæsset	76°49′	18°21′	16	15	0	ca. 29	.	.	.	.	.	.	.
Kap Carl Ritter	76°07′	19°48′	.	yes	.	.	.	.	.	190*	.	.	488
Kap Arendts Næs	75°57′	18°43′	.	7	1	1	.	.	.	.	.	.	.
Muschelberg	ca. 75°09′	ca. 19°51′	many	many	.	yes	.	.	.	.	.	.	571, 576
Shannon Ø — Kap Børgen	75°26′	18°01′	.	.	.	1	.	.	.	.	.	.	641
Shannon Ø — Kap Philipp Broke Halvøen	ca. 74°56′	ca. 17°36′	0	many	yes	yes	.	.	.	.	.	55	330-331, 598-600, 635*†
Shannon Ø — Kap David Gray	ca. 74°58′	ca. 18°31′	4	yes	1	yes	.	.	.	.	.	.	563, 564
Pendulum Ø — S. E. side	ca. 74°38′	ca. 18°28′	.	.	1	.	.	.	.	.	.	.	.
Pendulum Ø — Kap Desbrowe	74°37′	18°27′	.	.	yes	.	.	.	.	.	.	.	598
Pendulum Ø L. — S. W side	74°38′	18°29′	3	yes	0	.	.	.	.	.	.	53	335*, 341, 346-347, 597-598†
Sabines Ø — Different places	ca. 74°33′	ca. 18°49′	.	.	.	yes	.	.	.	.	.	.	596
Sabines Ø — Cairnspitze	ca. 74°32′	ca. 18°48′	.	yes	.	.	.	.	.	.	.	.	595-596
Sabines Ø — Sternwartenhalbinsel	74°32′	18°50′	4	yes	ca. 10	yes	.	161, 526, 411	.	.	.	.	315, 384, 589-597*
Hvalrosøen	ca. 74°31′	ca. 18°47′	.	yes	.	yes	.	.	.	.	.	55	.
Flache Bucht—Kap Borlase Warren	ca. 74°20′	ca. 19°13′	.	yes	yes	yes	.	.	.	.	.	.	346, 606
Kap Borlase Warren	74°18′	19°22′	2	yes	yes	yes	1-30	.	324, 325	.	.	.	608
Clavering Ø — N. E. side	ca. 74°13′	ca. 20°10′	.	.	1	.	.	.	.	.	.	.	.
Clavering Ø — Kap Mary	ca. 74°09′	ca. 20°10′	yes	.	yes	.	1-30	.	325	.	.	.	610, 620-621
Clavering Ø — S. E. side	ca. 74°09′	ca. 20°19′	.	many	yes	.	.	.	.	.	.	.	613
Clavering Ø — Southcape	ca. 74°05′	ca. 21°09′	.	.	yes	.	.	.	.	.	.	.	615
Clavering Ø — S. W. side	ca. 74°06′	ca. 21°15′	ca. 23	yes	.	yes	1-30	418	382, 414, 418	.	.	.	616 618
Jacksons Ø, S. of Eastcape	73°54′	19°59′	0	yes	yes	.	.	.	.	.	.	.	645, 648
Kap Hold with Hope—Mackenzie-Bugt	ca. 73°29′	ca. 20°44′	yes	yes	0	.	.	.	.	.	.	.	651, 685
Mackenzie-Bugt	ca. 73°30′	ca. 21°33′	yes	.	.	.	.	.	.	.	.	.	654
Kap Franklin	73°15′	22°09′	yes*	yes	1	.	.	.	.	.	.	53*	.
Kejser Franz Josephs Fjord — W. of Kap Graah	73°16′	23°13′	yes	yes	.	yes	.	.	.	.	.	.	.
Kejser Franz Josephs Fjord — Kap Weber	73°31′	24°39′	yes	.	.	yes	.	.	.	.	.	.	.
Kejser Franz Josephs Fjord — Renbugten	73°23′	26°35′	1	.	.	.	.	.	.	.	.	.	.
Kejser Franz Josephs Fjord — S. shore	73°12′	25°59′	.	yes	.	1	.	.	.	.	.	.	670
Kejser Franz Josephs Fjord — Kjerulfs Fj. mouth, E. side	73°08′	27°09′	yes	.	.	.	.	.	.	.	.	.	.
Kejser Franz Josephs Fjord — Ruths Ø, N. side	73°01′	24°51′	.	.	.	1	.	.	.	.	.	.	.

Nathorst	Amdrup 1	do. 2	Thalbitzer	Duc d'Orléans 1	do. 2	Bergendahl	Kollm	Clavering's chart (Sabine)	Petermann's chart	Dusén's chart (Nathorst)	Notes
.	.	289*	.	228	12	343	563*	.	.	.	* No house-ruins were found.
.	.	.	.	242	15						
.	.	.	.	255-256, ill. 255	16 Pl. V	.	.	.	.	.	Named "Kap Bismarck". No graves were found.
340-341	.	.	.	.	.	.	.	.	.	.	* Misnamed "Kap Arendts".
.	.	.	.	263							
.	.	.	333*†	.	.	.	.	.	.	.	* The peninsula misnamed "Shannon Island". †No winter-houses were found.
94											
.	.	.	333	.	.	.	.	.	.	.	* Cf. p. 336 and the chart p. 336-337. †Cf. pp. 622-623, 625-26.
102, 105, 115-117	147, 292, 296	.	333, 484	.	.	.	.	.	.	.	* Illustrations pp. 589, 617.
97											
154	.	.	333*	.	.	.	.	.	.	.	* Misnamed "Sabine Island, southern side".
159	148	292, 296	333, 483	.	.	.	.	.	Eskimo Dorf (verlassen)		
.											
159	.	.	333	.	.	.	.	.	Spuren Eingeborner		
159-164, ill. 161											
164											
.	.	.	333	.	.	.	.	Exquimaux village	Eskimo Weiler (12 Köpfe)		
172	.	.	333								
364-365	.	.	.	.	.	.	.	.	.	△	△ Only to be found on the chart.
356-357	.	.	333	.	.	.	.	.	.	□△	* Winter-houses: cf. Pansch.
331, 338, 355, ill. 337	.	.	333	.	.	.	.	.	.	□	
330	.	.	333	.	.	.	.	.	.	□	
.	.	.	333								
145, 254, 256-258,* 263, 268	.	.	333	.	.	.	.	.	.	□	* Illustration p. 257.
292	.	.	333								

Table II (continued).

	Places	Latitude N.	Longitude W.	Winter-houses	Tent-rings	Graves	Other stone-remains	Scoresby 1	do. 2	do. 3	Hansteen	Pingel
Kong Oscars Fjord	Ruths Ø, S. side	73°00′	24°51′	.	yes	.	.	.	.	.	.	.
	Vegas Sund, S. side	72°44′	22°55′	1	yes	.	yes	.	.	.	.	.
	Åkerbloms Ø	72°30′	24°37′	.	yes	.	.	.	.	.	.	.
Traill Ø	S. of Kap Mewburn	ca.72°16′	ca.22°03′	.	2	.	1	253, 333	.	269	.	.
	Kap Moorsom-Kap Simpson	ca.72°13′	ca.22°03′	.	ca. 50	.	.	253-254	.	269	.	773
	W. of Kap Simpson	ca.72°09′	ca.22°10′	several dozen	yes	.	.	265-267	360	278	77*	.
Kap Fletcher		71°36′	22°07′	.	1*	.	.	.	.	.	.	.
Liverpool Kyst	W. of Kap Swainson	70°25′	21°45′	0	yes	.	yes	186-187, 333	354-355*	216 217	72*	769
	Kap Tobin	70°25′	21°58′	7	yes	ca. 20	yes	.	.	.	.	.
	N. of Kap Tobin	ca.70°29′	ca.21°59′	.	.	.	3	.	.	.	.	.
	Kap Hope	70°27	22°19′	.	yes	yes	yes	203	356*	230	74*	772
Hurry Inlet	Vargodden	70°51′	22°27′	.	.	.	1	.	.	.	.	.
	Fame Øer, largest island, W. side	70°49′	22°30′	yes	.	1	.	.	.	.	.	.
Jamesons Land	Kap Stewart	70°27′	22°38	11-12	.	7	yes	205, 208-214, Pl. VI	356-358	232-238, 247 Pl. VIII	74-75	772
	Jamesons Land, S. side	70°30′	23°25′	2	many	.	yes	.	.	.	.	.
Scoresby Sund	Syd Kap	71°17′	24°52′	ca. 10	yes	.	many	.	.	.	.	.
	Syd Kap Halvøen	71°18′	25°06′	.	yes	1	yes	.	.	.	.	.
	Nordbugt, E. side	71°33′	26°24′	.	yes	.	yes	.	.	.	.	.
	Nordbugt, W. side	71°34′	26°29′	5	yes	3	yes	.	.	.	.	.
	Renodde	70°30′	28°18′	4	5-6	2-3	yes	.	.	.	.	.
	Mines Land, S. E. of Røde Ø	70°28′	28°04′	0	yes	.	1	.	.	.	.	.
	Morænepynt	70°26′	27°50′	0	yes	.	yes	.	.	.	.	.
	Føhn Fjord, N. side	70°29′	27°01′	0	yes	.	yes	.	.	.	.	.
	Gaasepynt	70°22,	26°18′	4	yes	.	yes	.	.	.	.	.
	Gaasefjord, N. side	70°19′	26°28′	0	yes	.	yes	.	.	.	.	.
	Gaasefjord, head	70°05′	28°23′	0	yes	.	.	.	.	.	.	.
	Danmarks Ø W. of Hekla Havn	70°26′	26°13′	13	.	yes	yes	.	.	.	.	.
	Hekla Havn	70°26′	26°12′	.	13-18	.	yes	.	.	.	.	.
	E. of Hekla Havn	70°26′	26°10′	.	.	.	yes	.	.	.	.	.
Chr. IX.sLand	Kap Brewster	70°09′	22°10′	.	yes	.	yes	.	.	.	.	.
	Stewart Ø	69°57′	22°58′	yes	.	.	.	.	.	.	.	.
	Dunholm	69°55′	22°38′	7	2	.	.	.	.	.	.	.
	Skærgaards Halvø	68°07′	31°34′	8	6	yes	.	.	.	.	.	.

Petermann's Mittheilungen 1888	Koldewey 1	Ryder	Nathorst	Amdrup 1	do. 2	Hartz	Koch	Thalbitzer	Scoresby's chart	Ryder's chart	Duscn's chart (Nathorst)	Amdrup's charts	Koch's chart	Notes
.	.	.	292	.	.	.	.	333	.	.	△			
.	.	.	294	.	.	.	.	333	.	.	□			
.	.	.	*	.	.	.	.	.	.	.	△	.	.	△ Only to be found on the chart. * cf. pp. 306, 315.
.	588	.	338	.	.	.	.	333	.	.	△			
222	599	.	338	.	.	.	.	333						
.	.	.	.	.	.	.	.	333	.	.	□△	.	.	* Not east of Kap Simpson.
.	.	.	.	.	.	.	*	.	.	.	.	.	△	* Told me by Capt. Koch. △ Only to be found on the chart.
.	.	.	.	.	.	.	.	333	.	.	.	.	.	* Misnamed Kap "Lister". No winter-houses were found.
.	.	.	.	.	292, 296, 314-318* 317	.	.	333, 426-427	.	.	.	.	□	* Illustrations pp. 315, 316.
.	.	.	.	.	.	.	.	.	.	.	.	.	□△	* No winter-houses were found. □ Only to be found on the chart.
.	.	.	229, 344	.	.	.	.	.	.	.	.	.	□	
.	.	.	210, 212	.	.	.	.	.	.	.	.	.	□	
222	588	40-41, 285-288, 296, 298	201, 205	.	.	165	.	333	Exquimaux hamlet	□	.	.	□	
.	.	286, 289	.	.	.	.	.	333	.	□△	.	.	□△	
.	.	286, 289, 302	.	.	.	.	.	333	.	□				
.	.	286, 289-290	.	.	.	.	.	333	.	△				
.	.	286, 290	.	.	.	.	.	333	.	△				
.	.	286, 290	.	.	.	.	.	333	.	□				
.	.	286, 290-292, 301, 342	.	.	.	.	.	333	.	□△				
.	.	286, 292	.	.	.	.	.	333	.	△				
.	.	286, 292	.	.	.	.	.	333	.	△				
.	.	286, 292	.	.	.	.	.	333	.	△				
.	.	286, 292-293, 296	.	.	.	.	.	333	.	□△				
.	.	286, 293	.	.	.	.	.	333	.	△				
.	.	286, 293	.	.	.	.	.	333	.	△				
.	.	286, 295, * 302-303	.	.	.	.	.	333	.	□	.	.	.	* Illustrations pp. 74, 297.
.	.	286, 295-296, 301-303*	.	.	.	.	.	333	.	△	.	.	.	* Illustrations pp. 301, 302.
.	.	286, 296	.	.	.	.	.	333						
.	.	.	.	.	.	175	.	333	.	.	.	.	△	
.	.	.	.	.	295, 296, 314	.	280	.	.	.	.	.	□	
.	.	.	.	.	291, 295, 296, 313, 314	164	.	426-427	.	.	.	.	□△	
.	.	.	.	240-242, ill. 241	291, 294, 296, 312-313*	.	.	387	.	.	.	□	.	* Illustration p. 313.


Rypefjeldet
522
523
524
527
528
Syttenkilometermæsset
66
68
70
69
71
Renskæret
132.
133.
134
Maroussia
140
141
Stormbugt
313
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Snenæs
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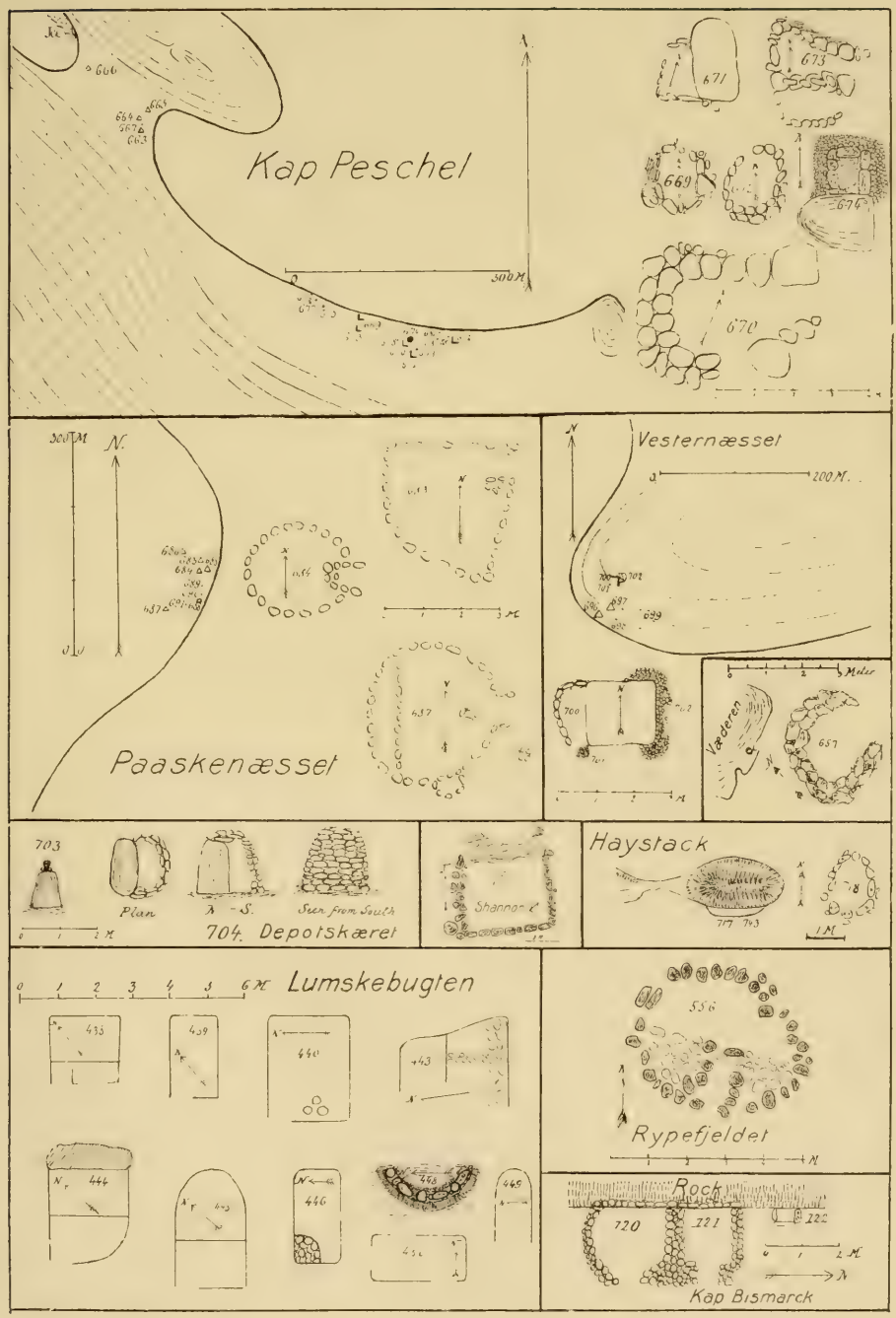

Kap Peschel
500 M.
671
673
669
676
670
Paaskenæsset
300 M.
N.
Vesternæsset
200 M.
Vaderen
Haystack
703
Plan
S.
Sten from South
704. Depotskæret
Shannon
Lumskebugten
Rypefjeldet
Rock
720
721
722
Kap Bismarck

CHART OF THE REGION INVESTIGATED.

Kap Bridgman
PEARY LAND
Independence Sound
Kap Peter Henrik
Kap Glacier
Hagens Fjord
Danmarks Fjord
N. Rolbirk
Nordost-Rundingen
Sophus Müllers Næs
Ingolf's Fjord
Fjeldstrand
Holms Land
Mallemukfjeldet
Hvalrosbugten
Nordbugten
Nordbugten
Nord

DANMARKS HAVN AND ENVIRONS.

Chart from Syttenkilometernæsset to Kap Peschel.

Copied from the Danmark Expeditions chart. □ = *Winter-houses.* Λ = *Tent-rings.* (*shelters*) ● = *Other stone remains.*

Reproduceret ved Generalstabens topografiske Afdeling Kjöbenhavn 1911.

V.

IMPLEMENTS AND ARTEFACTS OF THE NORTH-EAST GREENLANDERS.

FINDS FROM GRAVES AND SETTLEMENTS

(COLLECTION OF THE DANMARK EXPEDITION)

BY

THOMAS THOMSEN

1917

Introduction.

Among the wealth of scientific material brought home by the Danmark Expedition from North-east Greenland, the ethnographical collection is not the least important part.

It was the Leader of the Expedition, L. Mylius-Erichsen, who devoted to this sphere of work his keen interest and energy. He himself was not fated to see the results of his endeavours; in the spring of 1907, he recorded with enthusiasm his discovery of the first traces of Eskimos north of the inhospitable Jøkelbugt, which he had for some time regarded as the northernmost limit of human occupation on this coast[1]; six months later, he perished during a winter journey over the inland ice. After his death, the archæological-ethnographical work was carried on by Chr. Bendix-Thostrup, whose personal activity in this field includes numerous investi gations, and the careful labelling of the large mass of material. Each member of the expedition, however, made collections and excavations at the places visited, and it is only by such united effort that so extensive finds could have been made[2].

After the return of the Expedition, the work remaining to be done was divided, Hr. Bendix-Thostrup, who had personally supervised the greater part of the operations, undertaking to compile the descriptions of settlements and ruins[3], while the task of dealing with the actual objects found was allotted to the present writer, as one connected with the Museum side. I take this opportunity of proffering my respectful thanks to the Committee of the Danmark Expedition for having entrusted the work to my care.

Such a division rendered it natural to arrange the material according to the nature of the objects concerned, rather than by locality; in so doing, a clearer view of the culture of North-east Greenland would be obtained, while at the same time, the repetition inseparable from a record based on locality could be avoided. Such local dissimilarities as exist are, moreover, but slight, and may better be referred to while dealing with the separate implements, or subsequently noted.

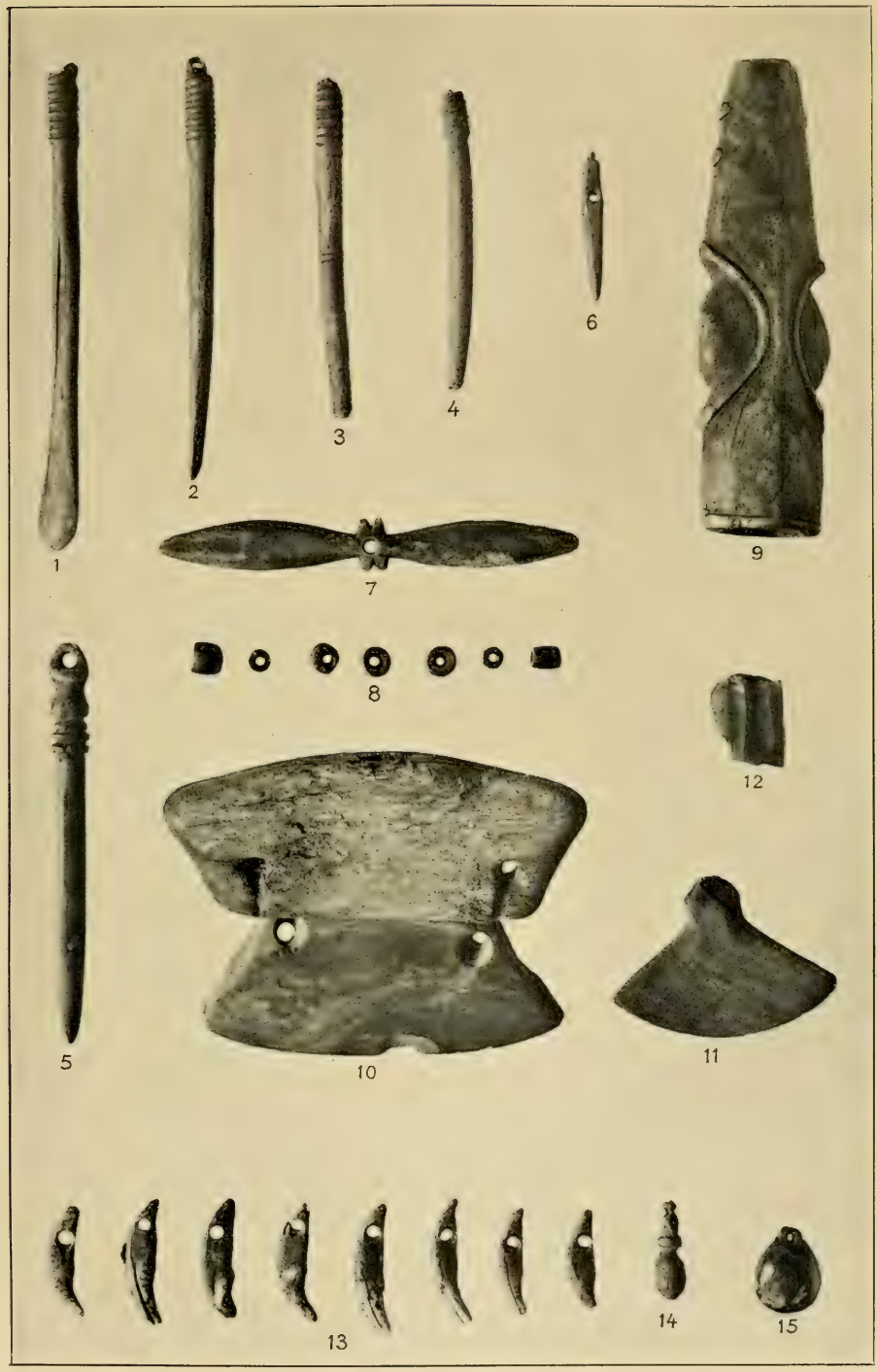
[1] cf. Thostrup p. 209. [2] loc. cit. p. 183. [3] Chr. Bendix-Thostrup: Ethnographical description of the Eskimo settlements and Stone Remains. Kbh. 1911 (Medd. om Grønl. XLIV).

In the case of certain finds, however, it was imperative to depart from this general arrangement; thus with burial places, for instance, where the collection of objects found in the grave represented the personal belongings of a single individual, it would have been unnatural to divide up the find into its separate parts. The grave and the objects found therein should be regarded as a single indivisible item, and grave finds demand a special chapter to themselves. Similarly also, I have found it advisable to devote another chapter to the special consideration of two larger finds, the remains of settlements, each of which may in some degree claim to be regarded apart from the rest. Here, however, the more detailed description of the separate items has for the most part been relegated to that part of the work dealing with implements generally.

In treating of single implements or groups of such, reference has, in the fullest possible degree, been made to the material previously brought home from North-east Greenland; in this connection, North-east Greenland is taken as indicating the now uninhabited northern portion of the East coast, with the Scoresby Sound district as its southernmost part.

The previous material here in question comprises — in order of locality from north to south — the collection in the Museum für Völkerkunde in Berlin, from the second German Arctic Expedition in 1869—70, which verges on the southern portion of the area investigated by the Danmark Expedition; the collection from the NATHORST Expedition (1899) in the Riksmuseum, Stockholm, from the region between 75° and 70°; a small section in the ethnographical collection of Christiania University, brought home by a Norwegian whaler, especially from Lat. 74° 20′ and finally, the extensive collections in the National Museum, Copenhagen, as procured by two Danish Expeditions, to wit, C. RYDER's in 1892 to Scoresby Sound, and G. AMDRUP's of 1898—1900 to the regions between Scoresby Sound and Angmagsalik.

In the case of the NATHORST collection, I have only been able to consider such items as are illustrated in the various published works; the remaining collections, however, I have been able to study in the respective museums, and beg to express my grateful thanks to the authorities concerned for the courtesy and assistance afforded me in the work. My special thanks are also due to Hr. HERLUF WINGE, Viceinspector at the Zoological Museum of Copenhagen University, who kindly undertook the determination of a large number of bone objects among the material.



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Grave Finds.

Although a considerable amount of material was brought home by the Danmark Expedition illustrative of the life and doings of the aborigines in the now deserted districts of North-east Greenland, it gives but scanty information regarding their relation to the dead. Altogether only twelve graves were found, distributed among seven localities. They were built, as usual, above ground and of stone; as elsewhere in Greenland they were not uniformly orientated; this depended on local conditions. In one case (grave 321) the skeleton appeared to have been lying in an extended position; otherwise, wherever it was possible to make observations, the body was placed in the position most common in Eskimo graves, namely with the knees tightly drawn up.

Two of the graves[1] were not investigated nor measured; the style of building of the others has been described elsewhere[2]; therefore, in the following pages only those will be considered which contained objects or which were distinguished by some special feature.

East shore of Stormbugt.[3]

Near the settlement in this locality four graves were found. One of them (grave 321) occurred separately on a rocky knoll.[4] It was the only grave in which the body appeared to have been fully extended, and accordingly the space was longer than usual, viz. 1.75 metres. Unfortunately the roofing had sunk somewhat, and formed an opening through which animals had gained admission and caused some disturbance in the position of the different parts of the skeleton. The extended position is not common in Greenland graves, but has nevertheless now and then been observed in West Greenland.[5]

The objects were few in number, but were of some interest as regards the elucidation of some previous finds. They consisted of eight pierced teeth of fox, a slender pendant of bone, and

[1] Nos. 695 and 714. [2] Thostrup, pp. 203, 267—68, 280, 306, 325, 327, 330 and 334. [3] With regard to place-names, the orthography of the charts drawn up by the expedition, and of Thostrup's work, has been adhered to. For the signification cf. Thostrup p. 190. [4] Thostrup, p. 267. [5] K. I. V. Steenstrup I, pag. 23.

another larger one of black stone, with one side flattened (Pl. VII, 13—15); they were lying immediately next to the skull.

An ornament, consisting of 53 pierced teeth, was previously found in an East Greenland grave on the Skærgaards Halvø (68° 7′ N. lat.)[1]; another, consisting of 36 teeth[2], was taken from a grave in northern West Greenland together with some women's articles, viz, a bodkin and a needlecase of bone. In none of these cases is the position of the ornaments in the grave known, but they may undoubtedly be compared with the row of teeth from the east shore of Stormbugt, the position of which in the grave proves that it has served as a necklace. How far the pendants have been strung on the same line as the teeth or have probably been used as ornaments for the ear or hair must be left for future consideration.

Upon the same rocky knoll on which grave 321 was situated, and about 30 metres NNW. of it, was a grave deposit (322) which had probably contained the rest of the grave-goods belonging to this grave, as no other graves occurred there; but unfortunately it had been opened and emptied.

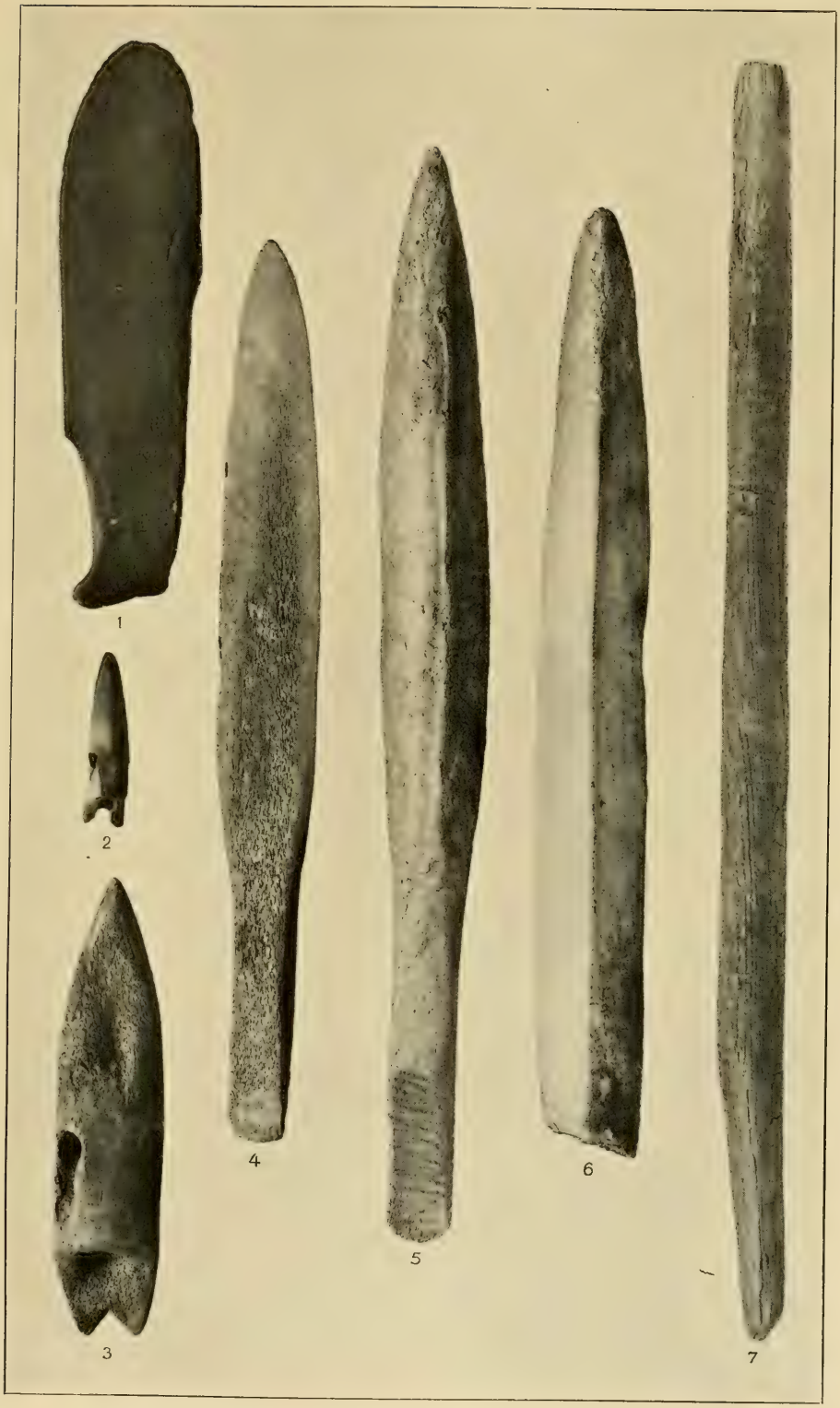
In the other burial place belonging to the settlement, three graves were found; these, however, contained no objects. In the neighbourhood of one of the graves (326) lay a fragment of a sledge shoe (Pl. IX, 5).

Snenæs.

Of the three graves[3] found in this place, two yielded very good finds of men's articles, while the third contained no objects.

Grave 422, which was handsomely built, is illustrated in THOSTRUP, p. 282. The grave-goods (Pl. VIII) consisted of the following objects: A single-edged knife of reddish slate, with a short handle (Pl. VIII, 1); two harpoon heads (Pl. VIII, 2 and 3), entirely of bone, the one of them intended for use, 10·1 cm. long, and the other a miniature specimen, only 3·8 cm. long; three large slender arrow-heads of bone (Pl. VIII, 4—6), triangular in section. One of the specimens is fragmentary; the other two are 23·7 and 19·6 cm. long; their butt ends are bevelled and roughened for application to the shaft. Moreover, there was a fragment of an arrow shaft bevelled at one end, 28 cm. long and up to 1·6 cm. thick. The miniature harpoon head only was lying inside the grave, near its north end, and east of the spinal column of the skeleton. The rest of the grave-goods, as frequently happens, were deposited outside the grave, in this case along its east side.

[1] Mus. No. L. 4459, brought home by G. Amdrup (THALBITZER I pp. 417—419).
[2] Mus. No. L. c. 497. [3] THOSTRUP, pp. 280 et seq.



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Grave 423, illustrated in THOSTRUP, p. 283, was located only about 20 metres SSE. of the preceding one. Its interior length was only 1—1.22 metres; hence there was only room for a body in a contracted position. Here, all the grave-goods were lying outside the grave, along its east wall; the objects in question are shown in Pl. IX, 1—4 and consisted of: A handsome, slender single-edged knife of reddish slate (Pl. IX, 4); in contrast to the one found in grave 422 it is without a distinct handle; three miniature weapons with fragments of shafts, viz. an arrow with head of bone (Pl. IX, 1), the fore part of which has been widened on account of the slit which has been made there by drilling for the reception of the blade, the marks of the drill being still visible; an arrow (Pl. IX, 2), the bone head of which is shaped like Figs. 4—6 of Pl. VIII; and a harpoon (Pl. IX, 3) with foreshaft of bone, evidently split off by boring, and head entirely of bone; unlike those shown in Figs. 2 and 3 of Pl. VIII, it has only one barb at the butt end. All three specimens are bevelled at the shaft end and have been inserted in a slit in the fore end of the shaft.

There is a very marked similarity between the objects belonging to the two graves from Snenæs: both finds included a single-edged knife, harpoons and arrows, objects belonging decidedly to men. It is of special interest, that the finds from both graves contained, besides things meant for real use, miniature specimens also. As in both cases the skeleton of a full-grown individual only was found, the miniature weapons cannot be interpreted as playthings; they must be regarded as symbols, deposited instead of the real weapons. Such miniature objects have often been found in Greenland graves, and the opinion that they were symbols has also been advanced[1], but the evidence was not so clear that this could be stated with any certainty. The same custom, which incidentally is well-known from various primitive peoples, prevails among the Central Eskimo[2]; it is also found in ancient times in Europe, including Denmark.[3] Even among civilised people like the Chinese it is customary to burn at the grave symbols of clothes and money intended for the dead.[4]

Rypefjeldet.

On one of the islands in the delta of the river[5] Gravelven a grave was found pointing east and west; it was 1·42—1·55 metres in length. The stone roofing had partly collapsed into the grave, and had disturbed the position of the skeleton.

[1] RYDER I, pp. 327—28). [2] BOAS I, p. 613. [3] Cf. for instance SOPHUS MÜLLER, Vor Oldtid, p. 375; Nordische Altertumskunde, vol. I, p. 519. [4] Cf. for instance DAVIS, vol. I, p. 296. [5] THOSTRUP, p. 306.

As on the east shore of Stormbugt, the necklace only — viz. seven black, cylindrical stone beads (Pl. VII, 8) — was lying inside the grave. Exactly similar beads have been found at Hekla Harbour near Scoresby Sound.[1]

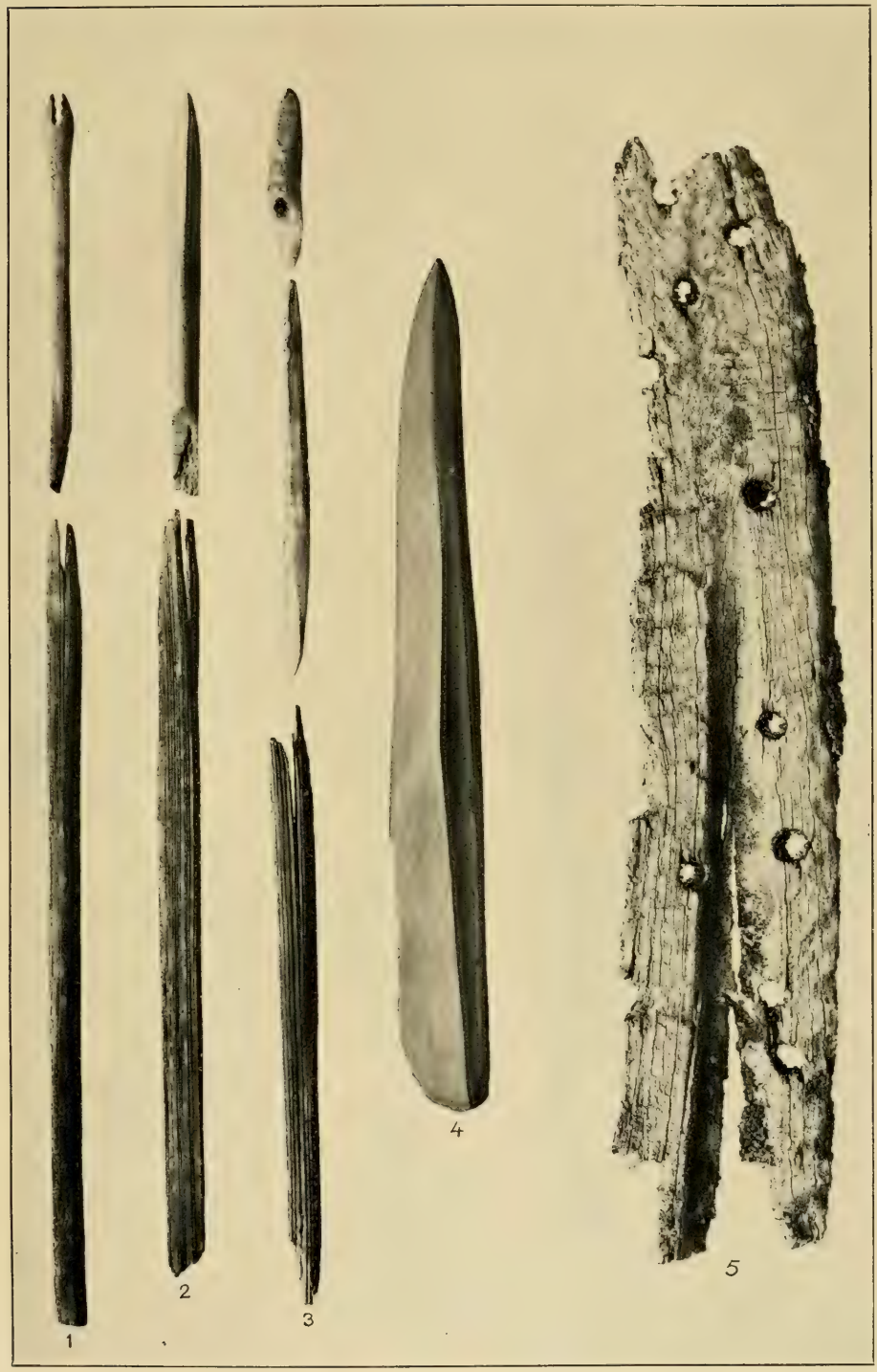
The rest of the grave-goods were deposited in a small space, enclosed with stones, only 30 cm. square, and situated immediately south of the grave. They had been lying in an oval wooden box, of which only the bottom, 18·5 cm. long and 9 cm. broad, was preserved, while the sides, which had probably been made of whalebone, as is not infrequently the case, had crumbled away. The find consisted of: Two women's knives, Ulos, (see Pl. VII, 10 and 11), of which the larger, of reddish slate, was furnished with a wooden handle; the blade had been inserted in a groove in the handle and lashed to it; the smaller one, which was of greenish slate, had no handle; also a needlecase of bone of the shape peculiar to Greenland (Pl. VII, 9); four bodkins or bodkin-like bone pieces (Pl. VII, 2—5); a similar implement, but with a leaf-shaped expansion below (Pl. VII, 1), which had doubtless been used as a boot-sole creaser; a small tapering needle-shaped piece of bone, pierced transversely (Pl. VII, 6); a flat bone toggle button (Pl. VII, 7), pierced in the middle and with two leaf-shaped wings; lastly a tiny flint core (Pl. VII, 12), from which flakes had been chipped off, and two flint flakes.

In another similar grave deposit (531) which was situated 2 1/2 metres SE. of the grave, only some small wooden sticks were found.

These objects strongly recall the find from the Skærgaards Halvø, brought home by Captain G. AMDRUP's expedition of 1898—1900.[2] Unfortunately the leader of the expedition was absent when this splendid and important find was made; it consisted of goods from three separate graves, and on his return he found that the objects had been mixed up. A comparison between these two finds may, however, throw some light on both. The find from the Skærgaards Halvø contained, among other things: a box with an oval, wooden bottom (THALBITZER, p. 409, Fig. 26); a woman's knife with a slate blade (l. c. Fig. 21 and Fig. 13); a needlecase (Fig. 35); a series of bone bodkins and similar implements (Figs. 18—20), and a bone toggle button pierced in the middle (Fig. 30); to these must be added the necklace of pierced teeth mentioned above (Fig. 34).

This group of objects, as regards its composition, approaches so nearly to the grave-find from Rypefjeldet that one may be justified in taking each as a single whole, the entire collection in either case

[1] Mus. No. L. c. 1381; Ryder I, p. 338, fig. 39 d. [2] THALBITZER I. pp. 386—425.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representing the funeral outfit of one woman; but this cannot be decided with any certainty. On inquiry, Captain Amdrup kindly informed me that he could state at any rate with pretty fair certainty that all the bodkins had been found together, which, moreover, is probable by reason of their homogeneous appearance. The find from the Skærgaards Halvø contains in addition various other objects belonging to women, as for instance thimble holders, and to men, as for instance two knife handles with notches for the fingers.[1]

In this find the bone implements are of special interest: —

The needlecase (Pl. VII, 9) is of the form peculiar to Greenland. It closely resembles the specimen from the Skærgaards Halvø, which, save for the remarkable specimen from Dunholm, is the only example known from East Greenland. From West Greenland the National Museum contains 16 specimens of this type, chiefly from the northernmost part of the west coast; one specimen only is known to have come from the region south af the Arctic circle, but that is from Julianehaab, the most southerly settlement in Greenland; this specimen[2] is however far more effaced in form than are those from North Greenland; in south Greenland the old type is replaced by a simple cylindrical case. In the district of Angmagsalik, the only part of East Greenland now inhabited, a triangular piece of skin is used instead of a needlecase.

On the needlecase from Rypefjeldet are two forms of ornamentation, one of them, which consists of a raised border running round the constricted part at the middle of the needlecase, occurs also on two West Greenland specimens. The other, consisting of two pairs of small knobs placed opposite each other near the tapering end of the needlecase[3], as if they were rudiments of nails driven through, is, on the contrary, not found in any other Greenland specimens, but such knobs are an almost constantly recurring feature on needlecases from Alaska, most frequently one pair, and placed higher up[4]. Franz Boas, in his interesting paper, regards this as an integral part of the article. It is consequently strange to find these apparently useless knobs occurring on a specimen from the most easterly Eskimo region, where the form of the needlecase has otherwise, on the whole, undergone a great change. It would be interesting if future finds should confirm that these knobs are a feature derived from the common Eskimo prototype, a feature which for some reason or other is regarded as essential to the object and therefore occurs sporadically throughout the region in question; any

[1] Thalbitzer I, p. 413 Fig. 29. [2] Cf. Birket-Smith, p. 33, Fig. 25. [3] This forms the lower end of the needlecase when suspended for use; the specimen is inverted in the figure. [4] Boas II, plates XXII—XXVI.

direct connection between the Alaska and the East Greenland form can hardly be imagined.

On the other hand, it must be maintained that there is a direct connection between the Greenland needlecases and one found on Southampton Island; the specimen shown in the paper cited (p. 326, Fig. 5 a) might equally well have taken its origin from West Greenland; even the characteristic alternate spur band, which is also found in Alaska, occurs on several of those from West Greenland.[1] The specimens from Frozen Strait shown in Fig. 5 d and e in the same place, are also difficult to distinguish from Greenland specimens; on the other hand, Fig. 5 b from Frozen Strait and c from Ponds Bay have an offset above, not found in Greenland, but this is probably a less important difference; the ornamentation, consisting of dotted edges, is also found there[2]; even the dots on the wings occur in several specimens.[3]

The find from the Skærgaards Halvø not only includes needlecases, but also counterparts to the rest of the bone implements; thus, specimens closely corresponding to the bodkins (Pl. VII, 1—4) with transverse grooves round their upper end and with the small eye above occur also in the other find. In North-east Greenland, so far as my knowledge goes, only one other specimen of this type has been found[4], in a child's grave near Scoresby Sound; in West Greenland, on the other hand, they are often found in the northern part of the country.

The fact that bodkins, boot-creasers, needles and similar objects are found in women's graves is only to be expected, as together with knives they constitute women's chief implements. It is, on the other hand, surprising that they are found in larger numbers in the same grave and usually fairly similar in size.[5] They should doubtless be regarded not merely as implements for use, but in an equal degree as articles of ornament. Here, I attach no importance to the fact that they are all intended for suspension, because the majority of the articles belonging to an Eskimo woman are carried in a hanging position; in this connection it is of greater importance that there exist similar finds of bone pieces which could not have been meant for use; thus, from a grave near Ata, in the district of Ritenbenk, there are 24 bone pieces[6] pierced at the upper end, about 10 cm long, quadrilateral in transverse section, and not pointed, but simply

[1] Mus. No. L. 2589; cf. also THALBITZER I, p. 527, Fig. 97. [2] Mus. No. L. 1358.
[3] Mus. No. L. 2589, 5671; on two of the specimens the dots are surrounded by circles (Mus. No. L. c. 786 and L 2846). [4] RYDER I, p. 334, Fig. 32 a (Mus. No. L. c. 1426). [5] From Nugak in Ritenbenk district 22 specimens (Mus. No. L. 2129—50), from Eqaluit in Umanaq district 10 (Mus. No. L. c. 774) and from Atanekerdluk in Ritenbenk district 7 (Mus. No. L. 2594—2600). [6] Mus. No. L. c. 806.

cut off below. Another grave-find, from Umanaq[1], contains a bodkin of a type similar to that from Rypefjeldet, moreover, a number of bones slightly pointed or quite unworked, three of which are pierced at the point, and could not therefore have served as implements; lastly, a dagger-shaped piece of bone and two small human figures, likewise adapted for suspension.

The two last finds, especially the pointed bones, remind one of the pendants which are found on Central Eskimo belts, hanging all along the skin strap. These also include small carved implements, knives, snow knives, etc. I am inclined to believe that the bodkins, when they occur in larger numbers, have been used in a similar way, the more so, as both the East Greenland finds contain belt-fasteners (Pl. VII, 7). There is, moreover, contemporary evidence of the fact that bodkin-like pieces of bone have been used as belt ornaments at Davis Strait in the 17th century; the statement runs as follows: — "*Elles sont ceintes d'une courroye de cuir, à laquelle au lieu de clefs, elles attachent plusieurs osselets, qui sont pointus comme des poincons, et de même longueur que des aiguilles de teste.*"[2] It is true, on the accompanying illustration the bodkins are seen hanging in a bunch from the belt; but I feel convinced that this is due to the artist having understood the author's remark about the keys as if he meant a bunch of keys; the large bow with which the belt is fastened in front suffices to show that the drawing is not trustworthy.

Besides the objects found in the grave and in the small grave deposit it remains to be mentioned that an antler, cut off at the lower end, was found stuck in between two stones of the grave, and that a worked piece of wood 1·19 metre long, was laid across the grave as a support for the stone roofing; at its thicker end it is bent, terminates in a point, and is furnished with a rectangular hole (Fig. 1). This object is not Eskimo workmanship; it is probably a tiller which has drifted ashore[3]. It is interesting on account of the use to which it has been put in the construction of the grave,

[1] Mus. No. 3926.

[2] L. D. P. (Louis de Poincy): Histoire Naturelle et Morale des Antilles de l'Amérique, Rotterdam 1658, p. 200. In a digression the author devotes a chapter to a journey made by a Dutch captain to Davis Strait in 1656. I am unable to identify more exactly the locality described; as regards his route it is only stated that he "*arriva sur la fin du mois de Juin dans le Detroit de Davis, d'où étant entré dans une revière qui commence au soixante quatrième degré et dix minutes de la ligne en tirant vers le Nord, il fit voile jusques au septante deuxieme, sous lequel la terre que nous allons décrire est située*". The chapter in question has been translated into English by David Mac Ritchie: The Eskimos of Davis Straits in 1656 (The Scottish Geographical Magazine for June, 1912).

[3] The National Museum contains another specimen of this kind from West-Greenland (Mus. No. L. 5670); it has been used as a block for the fire drill.

Fig. 1. 1/8.

and at the same time it is evidence of wood having been plentiful, seeing that such a large piece could be spared for this purpose. In the graves af West Greenland such wooden props are often found. The late Dr. K. I. V. STEENSTRUP, to whom the greatest honour is due for his investigation of the graves of these regions, writes about this as follows: —[1]

"Where the stones have not been long enough for the roofing a row of crossbeams of wood and antler serves as a support for the stones. Moreover, the Greenlanders say that the body was carried to the grave on these 'beams', a statement which is also borne out by the fact that such pieces of wood and antler are sometimes found stuck in here and there between the stones of the grave."

But less importance should be attached to the interpretation given by Greenlanders now living of their forefathers' customs than to the older records in which we are told that the body was either carried on the back, or dragged, to the grave.[2]

As regards the antlers stuck in between the stones of the grave, their presence is no doubt due to another cause, unknown to us; the specimen in question, which is only about 28 cm long, cannot at any rate have been used as a carrying pole.

Cape Peschel.

I wrote above that graves which contained no objects would not be described here, as that has already been done elsewhere[3]; but I think that one of them, grave 674, near Cape Peschel, deserves special mention. It is described by the investigator as follows:

The grave (674) consisted of an empty stone chamber, which for back wall had an erratic stone boulder c. 1 M. high. The Greenlanders Hendrik Olsen and Tobias Gabrielsen, when they showed me this ruin, told me that it was

[1] K. I. V. STEENSTRUP I, p. 22.

[2] CRANZ, vol. I, p. 301. POUL EGEDE records in the year 1735 (p. 50) regarding a dead woman: "Her son, whose duty it was next after his father to carry her away, was not strong enough. According to the custom she was to be buried on a hill or mountain. They therefore begged my brother, who was known for his strength, to do it. This he consented to do; he tied a sealskin strap, as he had seen they used to do, round the shoulders and loins of the corpse, passing the bight of the strap round his forehead, and thus he went with the woman upon his back in deep snow, to the appointed place, where he and her son erected a stone grave and placed her therein."

[3] Cf. p. 361.

a human grave, but I had great doubts about their story, as it appeared to me simply a heaped-up mass of stones. I saw later, however, that they were right, as on closer examination I found under a heap of small stones some large covering stones, and under these again a regularly built, four-sided stone-chamber, 0·96 M. long, 0·35 M. broad and 0·63 M. high. As already remarked, the chamber was quite empty, containing neither body nor grave-articles, but the grave showed absolutely no signs of having been disturbed.[1]

The grave was undisturbed, and the outer heap of stones was still standing; nevertheless, no trace of bones was visible, although in other cases bones are found preserved everywhere in these regions, even in graves which have been disturbed and where the air has had access, and animals have made havoc of the skeleton.

If this case were a solitary one it would be of no importance; but several parallel instances have been found in West Greenland. Thus on the island of Kugdlerkorsuit (73° 48′ 30″ N. lat.) were found three particularly spacious graves unusually well built of large stones. One of these contained an exceptionally complete and well preserved skeleton in an extended position; the only object it contained was a transparent glass bead. Then it is recorded: "The two other graves which we investigated subsequently, in spite of their being carefully built and closed, showed no trace of ever having contained a body."[2] K. I. V. Steenstrup had the same experience in his investigation of graves.[3]

Observations of this kind of course require careful consideration; there must be certain proof that the fact of the grave being empty is not due to the total destruction of the skeleton. The cases recorded from West Greenland are, however, undoubtedly entirely satisfactory. Of three graves situated in close proximity, C. Ryder found in the one an unusually well preserved skeleton, while the two others did not contain the slightest trace of bones, and K. I. V. Steenstrup, besides being an experienced observer, had the advantage of being a geologist; had there been any interference of natural forces to account for this, I am certain it would not have escaped his eye.

Similar examples can be quoted from Alaska. Thus in the territory of the Kvikpakmut, near the Yukon River, was found an empty, wooden grave-box[4] on which a picture of a bear hunt was drawn; it is described as a cenotaph erected for a bear hunter who had been killed.[5]

[1] Thostrup, p. 325. [2] Ryder II, pp. 233—234.

[3] "It is a peculiar fact that graves are sometimes found, carefully closed, but in which a body has evidently never been placed. Have such graves been built in memory of somebody who was lost, or have the Eskimo built graves for themselves before they died, and then had no use for them?" (Steenstrup I, p. 24.)

[4] Now in the Museum für Völkerkunde, Berlin. [5] Woldt, p. 211.

In southern Alaska this custom differs somewhat in form; there, in a place near Cape Vancouwer, EDW. W. NELSON found, for instance, erected some wooden posts, carved to represent human figures; behind them were placed boxes containing clothes and small objects; other articles were hanging on the figures themselves. It was said, that it was the custom in that district to erect such memorial posts for people who had been lost and whose bodies had never been recovered. For five subsequent years new clothes were hung on them yearly, and offerings were made as though the body of the dead had been buried there.[1]

Elsewhere too among primitive peoples the pious wish to honour those whom death has struck down when away from home leads to similar customs[2]; and the Greenland cenotaphs, also, are undoubtedly due to a like feeling.

The graves were few in number. Perhaps the custom of throwing the dead into the sea, which has prevailed on the southern part of the east coast[3], has also made its influence felt here. Besides, during a great part of the year, climatic conditions prevent the building of stone graves.

But in spite of their scarcity, the graves found by the expedition are of considerable interest. Fortunately they were individual graves, and have thus yielded in each instance the belongings of a single individual, and not, as is more often the case, the combined grave-goods of several persons; the considerable additions which they have made to our knowledge of the burial customs of the Eskimo in these regions, are, however, in no small measure due to the care with which the investigation has been carried out.

[1] NELSON, pp. 317—18, with figure.

[2] Among the Khasi hill tribes, near the north-east boundary of Bengal, where cremation prevails, in such cases some cowries and some of the deceased's clothes together with his ashes are placed in the family burial chamber. GODWIN-AUSTEN, p. 133).

[3] GRAAH I, p. 85; II, pp. 81—82. HOLM I, p. 106; II, p. 75.

Finds from Settlements.

Although the expedition, on its extensive travels, came across traces of Eskimo settlements as far north as 82° N. lat. on the south coast of Independence Fjord[1], yet the material brought home was obtained from a somewhat limited area. The dangerous and toilsome sledge-journeys northward compelled the baggage to be limited to the least minimum; nor did the forced day's marches afford opportunities for a thorough investigation of the camping grounds and house ruins found. Consequently the ethnographical field of investigation was mainly restricted to the districts situated in the immediate vicinity of the base of the expedition, namely Danmarks Havn, on the south coast of Germania Land. The chief settlements are situated on and off this coast; they are; Rypefjeldet, Snenæs, the settlement on the east shore of Stormbugt, Baadskæret, Renskæret and Maroussia; towards the east and facing the sea is Syttenkilometernæsset. Some settlements, less rich in material, were situated to the south and north, between 75° and 78° N. lat., from Shannon Island in the south up to Jökelbugten, the glacier-filled coasts of which form a boundary between a northern and a southern centre af habitation.

Along the stretch of coast from the south of Jökelbugten northwards up to Mallemukfjeldet, the steep sea-fowl cliff, difficult to pass, at 80° 10′ N. lat., no trace of Eskimo habitations was seen. On the other hand, north of this, at Ingolfs Fjord, three settlements were found, at Sophus Müller's Næs, at Eskimonæsset, north and south of the mouth of the fjord respectively, and at Fældestrand, situated somewhat more to the south on the sea-coast.[2] Fældestrand was only a camping ground, but at each of the other places there had, in addition, been a winter house; it was only on Eskimonæsset, however, that any finds were made.

[1] Cf. Thostrup, Pl. IV. [2] Thostrup, pp. 207 et seq.

Eskimonæsset.

The finds from Eskimonæsset (80° 26′ N. lat.), being the only relics of the sojourn of the Eskimo in these northermost regions, occupy a peculiar position, which makes it natural to treat them collectively.

The finds consist almost exclusively of bone implements, large in size, which show that material was abundant. The snow knife (Pl. X, 1) is unusually large and strong, being 41 cm. in length and 7·3 cm. in extreme breadth. Pl. X, 2, shows the broken blade of a similar knife measuring in this condition 29·5 cm. in length.[1]

The bone object[2] shown in Pl. X, 6 is made from a rib-bone and is 44·7 cm. long; it is narrowed down and roughened at both ends in order to be tied to something or other; at the end which is turned upwards in the figure, moreover, a bevelled surface is seen, which shows that it was intended to be lengthened by splicing on another piece to it. Here we undoubtedly have a cross-bar of a sledge, as they were made where wood was scarce. The sledges seen by JOHN ROSS at Cape York had similar cross-bars; in his figure[3] one can see that the stave uniting the two uprights consists of two separate pieces spliced together.

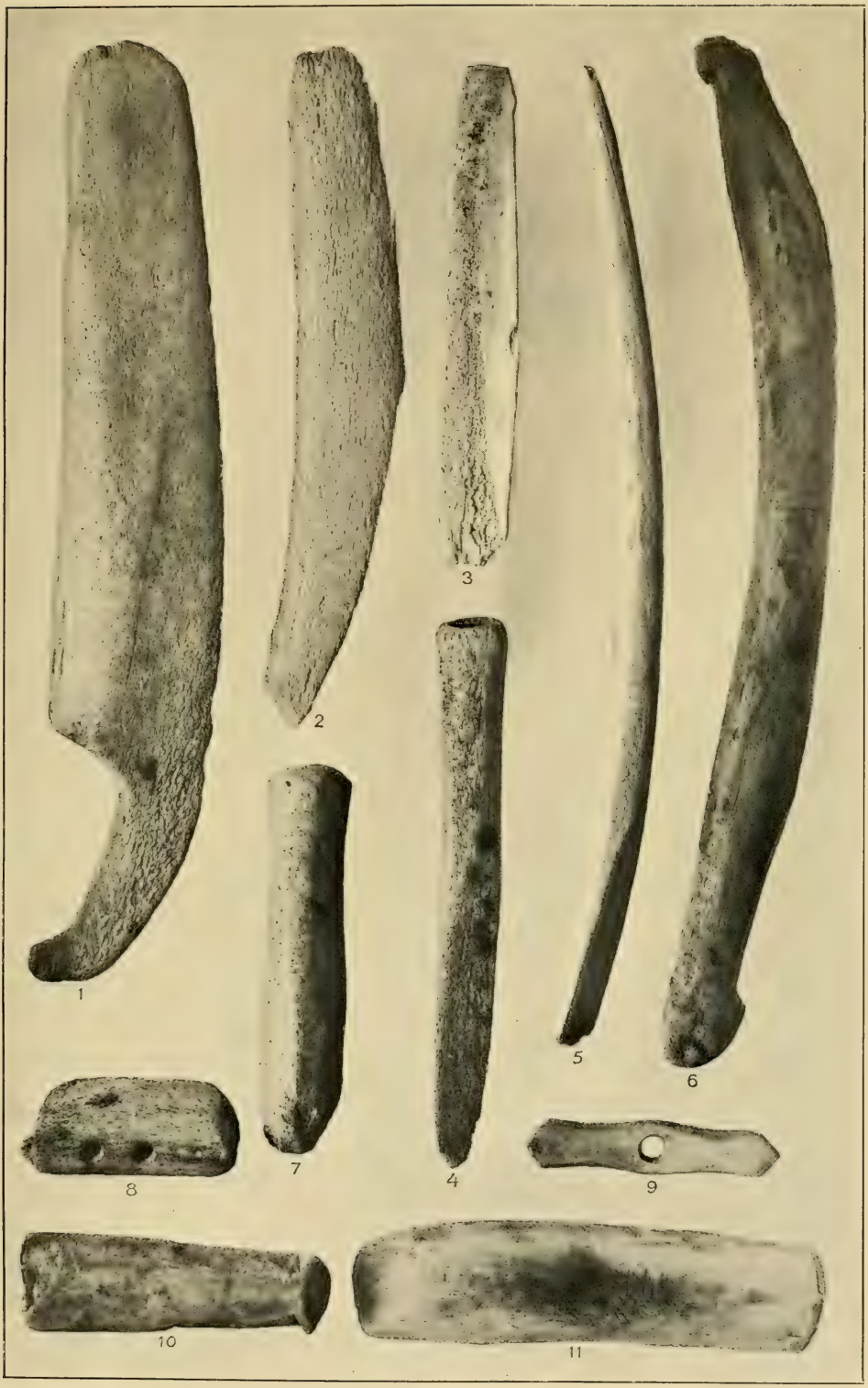
A considerable number of sledge-shoes of bone were found. One, 50·7 cm. long is shown in Pl. XVIII, 13[4]; in several of the holes, which, as is usual, were drilled in various directions in order to give a better hold, wooden nails still remain fixed. Seven other specimens[5] are from 11·3 to 39·3 cm. long; one specimen is only 4·2 cm. wide, the others vary from 4·9 to 5·5 cm. in width. Besides these there were two large bone pieces without holes[6], undoubtedly unfinished sledge-shoes; they are 6·1 and 7·3 cm. broad respectively.

A foreshaft, 24·2 cm. long, for the harpoon shaft, is shown in Pl, X, 4[7]. Its butt end is bevelled for splicing to the shaft; at its fore end is seen the socket for the loose shaft, while immediatedly in front of the bevelled surface there is a hole for the thong with which it was secured to the shaft.

The next piece (Pl. X, 5)[8] belonged to an ice-hunting harpoon; it has been spliced to the shaft at its butt end, while the harpoon-head has been placed at its fore end. It is 42·6 cm. in length and 2·9 cm. in extreme breadth.

In Pl. X, 10[9], is figured an axe-head. It is seen from above; to the

[1] Mus. No. L. 3099—3100. [2] Mus. Nr. L. 3101. [3] JOHN ROSS, A Voyage of Discovery; plate opposite p. 102. [4] Mus. No. L. 3091. [5] Mus. No. L. 3092—3098. [6] Mus. No. L. 3083—3084. [7] Mus. No. L. 3106. [8] Mus. No. L. 3106. [9] Mus. No. L. 3103.



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left is the end in which a groove has been cut for reception of the cutting edge, which was probably of stone. At the top a piece has been split off the edge of the groove. The rear portion of the blade is somewhat tapering, trapezoid in transverse section, and has its sides and under-surface roughened for lashing more securely to the handle; the butt end itself has a projection to prevent the blade from slipping forward. Another blade of an adze (Pl. X, 11)[1] has the cutting edge in one piece with the blade; in this case there is no constriction or any other adaption for attachment to the handle.

Pl. X, 9[2], which is 11·2 cm. long, is probably the handle of a seal drag. Pl. X, 3[3] is a very thin, flat piece of bone, 21·8 cm. long and 3·2 cm. broad, with a slight enlargement near the ends, apparently for the purpose of attaching it to another piece. Nothing can be stated regarding the purpose either of this piece of bone or of the implement shown in Pl. X, 7[4], which is 17 cm. long and nearly cylindrical, and in which the end facing upwards in the figure has a convex surface; it appears to be suitable for a pestle. The bone piece illustrated in Pl. X, 8[5] is pierced with holes transversely; but these are probably only due to attempts at splitting it for use.

There were several fragments of soapstone cooking vessels; one of them is figured in Pl. XXIV, 3[6]; it shows a corner of the vessel with a projection for one of the holes through which the carrying strap was passed.

Snenæs.

One other find deserves to be treated collectively; not, as in the preceding case, on account of the situation of the locality, but because one of the houses here yielded so large an amount of material that it gives a vivid impression of the daily life of the settlement.

Snenæs is a naze jutting out into Dove Bugt from Winges Kyst on the south coast of Germania Land. Here there were, among other remains, 13 winter houses divided into three groups.[7] The group situated nearest the coast consisted of three houses, two of which were investigated. In both of them a few human bones were found, and on account of this and of the rich find obtained in the westernmost house, C. B. Thostrup is of opinion that the occupants of these houses had died off on the spot. The easternmost house (407) was only superficially investigated; the westernmost (406), in which excavations were made both by Mylius-Erichsen and by C. B. and Gustav Thostrup, is the one we shall con-

[1] Mus. No. L. 3088. [2] Mus. No. L. 3089. [3] Mus. No. L. 3105. [4] Mus. No. L. 3102.
[5] Mus. No. L. 3090. [6] Mus. No. L. 3109. [7] Thostrup, pp. 276 et seq.

sider below. C. B. THOSTRUP, in the place cited, describes it as follows:

"Winter-house 406 had two small annexes at the front wall, which were mostly filled up with remains of bones. The platform was constructed of gravel; on the floorplace there were flat stones and the bottom of the passage lay lower than the floor. Above the innermost, flat, covering stone of the passage there was a recess with a triangular opening in towards the house. The measurements of the opening were: along the base 0·37; the sides 0·32 and 0·24 M."

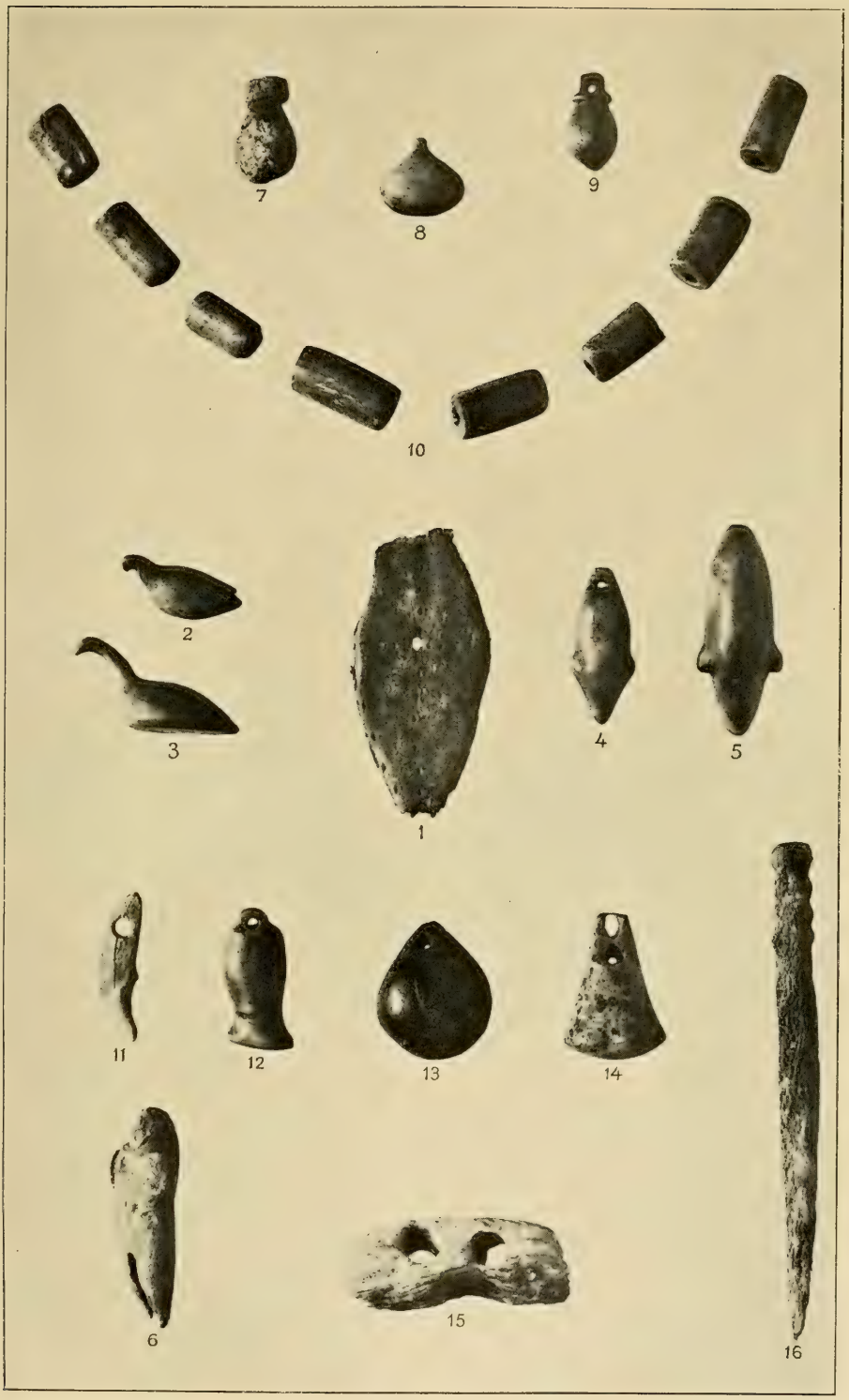
A ground plan of the house is given in the same work Pl. II.

A number of ornamental objects and small figures from this house are illustrated in my Pl. XI. 2—14, viz. Nos. 7—9, three bone pendants; 10, eight long cylindrical bone beads; 11, a pierced tooth similar to those found in grave 321 on the east shore of Stormbugt (cf. Pl. VII, 13); 12, a boot-shaped pendant ornament of bone; 13, a black stone pendant, with one side flattened (cf. Pl. VII, 15); 14, a conical pendant of mottled green stone. Besides these there are several bone figures, viz. Nos. 2—3, representing swimming birds, both flattened on their under sides, so as to stand, but provided in addition with a hole at their rear end for suspension; a third specimen is not figured; 4—5, seals, flat on the side reversed in picture so that they are imagined lying on their backs; but, like the preceding, also intended for suspension; 6, a woman with an *amaut*, the wide hood distinctly shown, but the lower part of the figure less carefully executed, the legs, for instance, being separated only by a bored out groove. The figures were found inside the house, immediatedly to the left of the passage.

Such small bone figures of animals, adapted for suspension, and flattened below, so that they can also stand or lie down, are known from North-east Greenland in AMDRUP's find from Cape Tobin (70° 24′ N. lat.) and in the find from Rypefjeldet brought home by the Danmark Expedition, but, as far as I know, they have not been found in West Greenland. Very closely related to this East Greenland group is a find consisting of some ten small figures representing seals, bears, etc., obtained together with some other miniature objects by the Sverdrup Expedition in June 1902 at Stenkuls Fjord, Kong Oskars Land (about 77⅓° N. lat.).[1]

BOAS[2] informs us regarding a similar set from Cumberland Sound that they were there used for a kind of game, *tingmiujang* (i. e. images of birds), in which they were thrown as dice. MUR-

[1] In the Museum in Christiania, Nos. 12400—16 and 12429—35; SVERDRUP, vol. II, p. 494. They were lying closely together, as if they had been contained in a bag.
[2] BOAS I, p. 567.



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DOCH refers to this explanation in connection with a set of 29 figures strung upon a seal thong which he obtained at Plover Bay in Siberia[1]; TURNER and NELSON, on the other hand, maintain that figures similar in character from the Ungava district, Hudson Bay Territory, and from St. Lawrence Island respectively, are there used as toys only[2].

The bone figures found in North-east Greenland and those obtained by the Sverdrup Expedition are finer and somewhat more elegantly made than those which occur more to the west. Regarding the object of these figures nothing can be stated with certainty, but the fact that both at Snenæs, at Rypefjeldet (cf. Pl. XXV, 6—8, 10—12 and 14) and at Stenkuls Fjord they were found together with ornamental objects such as beads, pendants and small rings, makes it probable that their main purpose was to serve as ornaments.

The object illustrated in Pl. XI, 1,[3] must undoubtedly also be included among the ornaments. In form it most resembles the bone feathers at the butt end of certain Greenland harpoon shafts.[4] It must, however, be compared with an ornament found in an East Greenland grave near Cape Franklin (about 73¼° N. lat.); the articles, which were lying in a wooden bowl, included for instance an Ulo, which characterises the grave as that of a woman.[5] The Danmark Expedition brought home one more specimen of this kind from Rypefjeldet (Pl. XXV, 19). Both specimens are ornamented with a dotted cruciform figure, the centre of which coincides with the hole pierced in the centre of the object; the latter specimen has in addition a circle of dots around the central hole, and two holes at its upper edge; this last might also have been the case in the specimen from Snenæs, which is somewhat damaged above. The specimen from Cape Franklin is more richly ornamented, the vertical arm of the cross consisting of three, and the horizontal arm of two rows of dots, while the edge is also decorated with a similar row; besides the central hole we find here also an upper and a lower hole. Its

Fig. 2. ²/₃.

[1] MURDOCH I, pp. 364—65. [2] TURNER, p. 260; NELSON, p. 342. [3] Mus. No. L. 3805.
[4] Cf. MASON I, Pl. 5. In early times these feathers were broader and shorter.
[5] STOLPE, pp. 104—5. NATHORST, p. 364.

ornamentation is found on a series of necklaces and combs from Southampton Island. [1]

In addition to the quite small figures of animals, two larger ones were found in the house at Snenæs, beautifully carved in bone, representing bears in the usual attitude with outstretched necks (Fig. 2).

Fig. 3. $^2/_3$.

The specimen shown in Fig. 2 *a*, (L. 3764; length 8 cm.) rests, as may be seen, on a flat base, and has two holes pierced transversely through. It must therefore have been intended for attachment to another object, probably either a harpoon or a lance shaft, as a finger rest. In other cases in Greenland only a simple bone knob is used for this purpose, but among the Central and West Eskimo they are found to be larger and more elaborately executed. [2]

The other figure of a bear [3] (Fig. 2 *b* and 3; length 9·1 cm.) is more finished; the fore and hind legs are separated from each other, but united in pairs; there is, however, a hole pierced through between the hind legs. At the tip of the snout also, a small hole has been pierced right through. On either side are two depressions which undoubtedly indicate lance wounds. It is a particularly fine and beautifully made plaything.

Most conspicuous among the men's weapons is the large number of slate blades — no less than 18 — for harpoon, spear and arrowheads (Pl. XII, 3—15; Pl. XIV, 9). They are from 3·4 to 8·1 cm. in length and from 2·4 to 4·4 cm. in width; one only had a nail hole for fastening to the shaft. Fourteen of them were lying together in the oval wooden vessel shown in Pl. XXIV, 8. There were some chips of slate, evidently put by as material for future use. There was also found a slate blade, 11·2 cm. long, with tang and nail hole (Pl. XII, 2).

Harpoon heads (Pl. XIII, 3—6) to the number of four were found; three of them are provided with a drilled slit for the blade; the fourth, which is much weatherworn, does not appear to have a separate blade. Three have two barbs at the butt end, and the fourth one only; one of these specimens (6) is, however, not quite finished, lacking the socket. Two roughly shaped examples (Pl. XIII, 1—2) show that to begin with the fore end was worked into a provisional point, and the butt end bevelled for the barb.

[1] Cf. BOAS III, p. 74, Fig. 102; p. 107, Fig. 156; p. 417, Fig. 215 *a* and p. 419, Fig. 217; LYON, p. 62.

[2] Cf. BOAS III, p. 17, Figs. 9 and 11; NELSON, Pl. LVII *b*. Figs. 21—23 and 27—32.

[3] Mus. No. L. 3763.

2/3

As indications of land hunting there are a long, slender arrow-head of bone and two of the well-known implements (Pl. XIII, 7) for twisting the backing of the bow[1]; the latter are only 7·5—8 cm. in length and rather slender.

Of the sledge and its accessories two bone buckles for the harness were found, 7·8 and 6·2 cm. long (Pl. XV, 11—12); in the larger specimen the groove has obviously been made by drilling. Of sledge shoes two specimens were collected, one of which (Pl. XVIII, 14) had been fastened to the fore end of the sledge-runner; it is 35·3 cm. long and 7 cm. wide, and tapering in front, with apex rounded. A transverse groove near the fore end has served for the reception of a strap. The bone object with two pierced holes shown in Pl. XI, 15, has probably served to tighten the cross straps of the kayak.[2]

Of men's knives there are a complete example and a fragment, the former, a single-edged slate knife, is 12·9 cm. in length and 3·5 cm. in extreme breadth, without a constriction for the handle (Pl. XII, 1). A slate reamer is shown in Pl. XIII, 9; of the apex, which is polished, the extreme tip is missing; it expands at the butt end and passes evenly into the tang, which is not polished.

The series of men's objects is completed by some material partly worked, consisting of pieces of antler, split off by boring, or cut off.

From woman's sphere of action the lamp stood as yet untouched in front of the platform, and around it lay fragments of the cooking vessel. The lamp, which was of mica slate, was 24·5 cm. long and 15·5 broad (Pl. XXIV, 1). The fragments of the cooking vessel show that it had been broken actually during use and had been pierced with holes for lashing the fragments together (Pl. XXIV, 4). The height of the vessel had been 9·5 cm.; and at the angles there had been ears for attaching the straps for suspension.

Of women's knives some beautiful specimens made of slate were found. The largest (Pl. XII, 16), which is 12·4 cm. long and 8 cm. high, has a sharply curved cutting edge, the sides are slightly rounded, and it terminates at the top in a small tang; there are no holes for nailing. Another knife (Pl. XII, 18), 12·3 cm. long and 6·8 cm. high, has a slightly curved cutting edge and straight sides; it has had a tang similar to that in Figure 16, but it is partly broken off; below the tang are two holes for attaching the handle by nails. A third specimen (Pl. XII, 17) is smaller, being only 4·8 cm. high; this specimen has also had a tang and two nail holes, but is now damaged at both ends. While these three knives are carefully made and quite thin, there is a fourth blade of slate (Pl. XXIII, 3) which is quite

[1] Cf. Murdoch II Pl. X Fig. 27. [2] Cf. Nansen, Eskimoliv, p. 37, the figure to the left, and pp. 39—40.

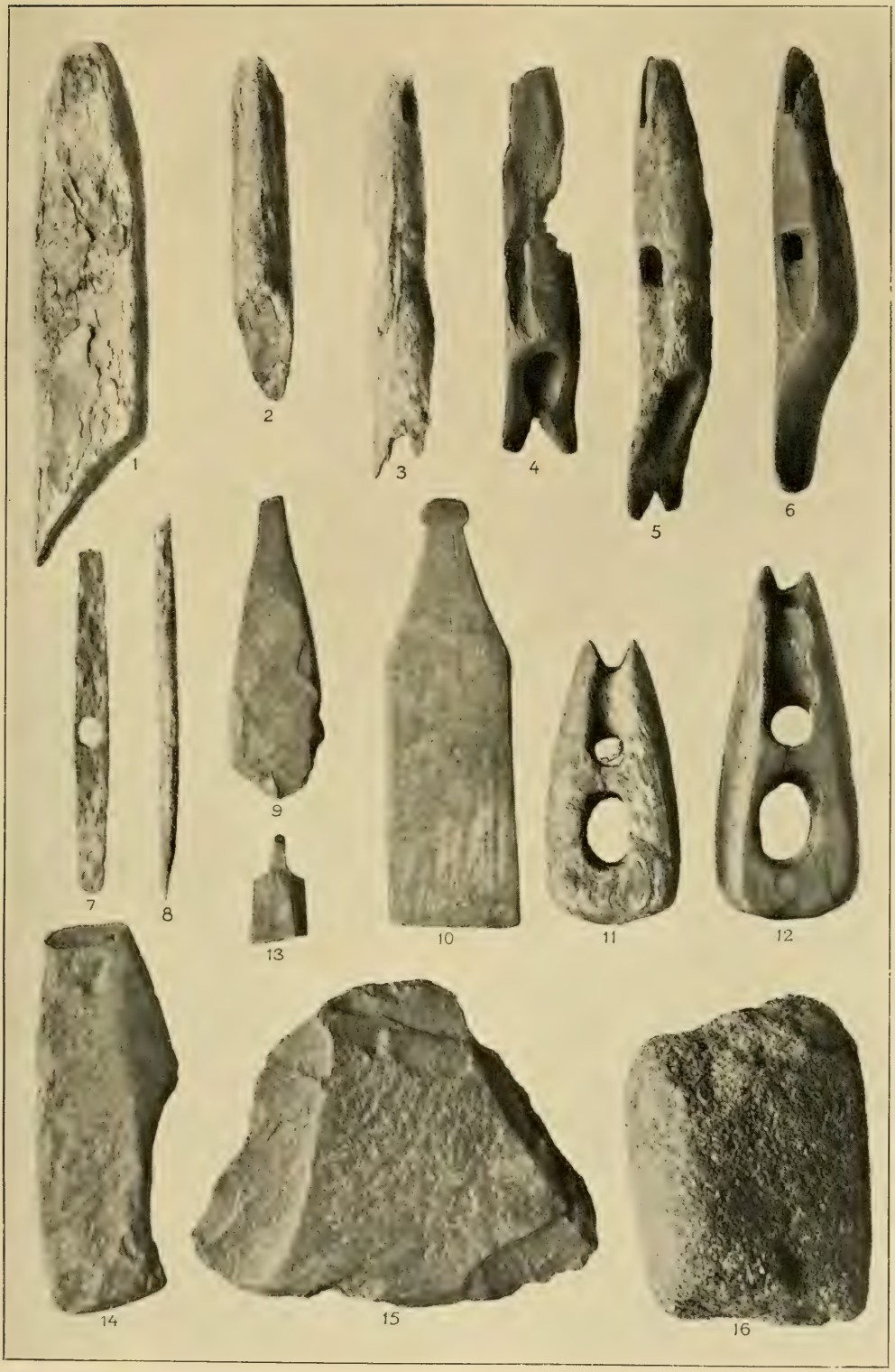
rudely fashioned, thick, and polished at the cutting edge only; it is 5·6 cm. long at the cutting edge and 6·9 cm. high.

One bone bodkin (Pl. XI, 16) resembles those shown in Pl. VII, 2—4, in being ornamented with transverse grooves behind, a hole is pierced from the rear end out to one side for suspension; it is 7·1 cm. long. The object figured in Pl. XIII, 8, should possibly also be described as a bodkin; it is 8·6 cm. long; rather rudely fashioned, and broken off behind; at the fore end it is sharply pointed.

The purpose of the small wooden board figured in Pl. XIII, 10, is uncertain. It is 9·5 cm. long and 2·9 cm. broad; at the top it is constricted, and terminates in a knob, so that it can be carried in a hanging position. On both surfaces there are fine scratchings in various directions; on the one surface they occur especially in the upper part, almost parallel with the oblique edge; on the other, more irregularly and closest together near and along the lower edge of the board. In the National Museum in Copenhagen there are three specimens similar to this little board, all from a grave near Eqaluit in Umanaq Fjord in West Greenland[1]. The marks left show that they have been used for cutting upon; it is possible that they are small cutting-boards for finer needlework. Among the Eskimo at the Mackenzie River similar small boards were used as palettes[2].

[1] The same grave in which the bone bodkins, mentioned in footnote 3 on p. 366, were found. All three specimens have the same constriction above, but they do not terminate in a knob; the largest of them (13·6 × 3·7 cm.) is pierced for suspension, the two others (10 × 2·5 and 9 × 2·4 cm.) are not adapted for suspension, nor do they show any visible traces of having been used; on the other hand, the largest of them has become hollowed by use in the middle of both surfaces; scratches, nearly effaced, are seen in the hollows (Mus. No. L. c. 722).

[2] The museum in Copenhagen contains a specimen of this kind; it is attached by a strap to two paint bags and a small spatula; on the board are seen the same scratchings as on the Greenland specimens (Mus. No. P. c. 12, brought home by MACFARLANE; received 1868 through the Smithsonian Institution).



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Implements for Hunting by Sea and Fishing.

Harpoon Heads.

In the following descriptions, the harpoon head is imagined as lying on the surface which terminates at its butt end in the barb or barbs; in this position the socket for the loose shaft is always visible, and the line hole and grooves are usually so; it is in addition, the natural resting surface of the harpoon head[1]. The point is imagined turned away from the observer.

There are altogether nineteen harpoon heads, all from the south coast of Germania Land and adjacent islands; four are from Renskæret, one from the east shore of Stormbugt, seven from Snenæs and seven from Rypefjeldet. Two of them are, however, miniature harpoons from graves.

About half of them have a slit for a separate blade; the others are made all in one piece. In two specimens (Fig. 5 and 6 *a*) a bone blade still remains fixed in the head, fastened by a bone nail. In the others, the relatively great breadth of the slit (about 2 mm.) indicates that not even here has the blade been of metal; in no case has rust been observed. The slit is always in the horizontal plane. The drill has been used to produce slits and line grooves; in twelve of the specimens the edges of the drilled holes are still distinctly seen. (Cf. Fig. 4).

The harpoon heads may be divided according to their form into three groups:

Type I. Broader than they are thick; the maximum breadth occurring at the line hole. The line hole is drilled in the horizontal plane, the line grooves being placed on the upper side. At the butt end are two barbs. None of the six specimens belonging to this type have blade slits. The transverse section varies in shape, being rhomboid, lenticular, or usually with a convex under side and a

[1] American authors orient it in the reverse position with the barbs uppermost; see Murdoch I, p. 218 and Mason I, p. 201.

low ridge on the upper side; there is often a horizontal plane between the line grooves.

a *b*

Fig. 4. Type I. $^2/_3$.

To this type belong:

Mus. No. L. 3801. Snenæs, house 406; length 8·5 cm. (Pl. XIII, 4).

L. 3046. Snenæs, grave 422; length 10 cm. (Pl. VIII, 3).

L. 3042. Snenæs, grave 422, miniature specimen; length 3·8 cm. (Pl. VIII, 2).

L. 3975. Rypefjeldet, house 527; length 8·3 cm.; much weatherworn.

L. 4017. Rypefjeldet, from one of the houses; length 8.5 cm. (Fig. 4 *b*).

L. 4018. Rypefjeldet, from one of the houses; length 5·4 cm. (Fig. 4 *a*).

From the region south of the area investigated by the Expedition, between 70° and 75°, there are several specimens of this type.[1] These more southerly harpoon heads are slightly broader between the barbs, but otherwise they approximate more nearly to the above mentioned type than to the harpoon heads from Angmagsalik.[2]

Type II. Thicker than they are broad; quadrilateral with rounded angles in transverse section. The line hole is drilled horizontally, the line grooves being situated at the margins. In the present collection, all the specimens of this type, with the exception of the miniature harpoon shown on Pl. IX, 3, have blade slits; one of the specimens is, however, so weatherworn that on this point nothing can be stated with certainty.

The following specimens belong to this type:

a. With two barbs at the butt end:

Mus. No. L. 3553. Renskæret, house 134 (Fig. 5); length 9 cm.; bone blade still attached, being fastened by a bone nail in a slit, 1·9 cm. deep; blade 2·8 cm. long and 2·1 cm. broad at the butt end, where it originally had two small barbs, one of which is now broken.

L. 3798. Snenæs, house 406 (Pl. XIII, 5); length 10·1 cm.; the blade slit, which was made by drilling, is 1·6 cm. deep and 0·3 cm. broad; no nail hole.

L. 3800. From the same house as the preceding (Pl. XIII, 3); length 9·3 cm.; slit drilled, 1·5 cm. deep, 0·3 cm. broad; no nail hole.

Fig. 5. Type II *a* $^2/_3$.

[1] In the National Museum in Copenhagen: L. b. 750 (figured by RYDER I p. 314, Fig. 13 *a*) and L. b. 715; moreover L. 4534 (this last is figured by THALBITZER I, p. 325, Fig. 1). One specimen from the Swedish NATHORST Expedition is figured by STOLPE, Pl. IV, Fig. 14 and by SVENANDER, p. 40, Figs. 4 and 5. [2] THALBITZER II, pp. 426 et seq.

Of this type the following specimens occurred in previous finds: From Cape Tobin (70° 24′) one specimen with iron blade[1]; from Skærgaard Halvø (68° 7′) one specimen with slit and nail hole.[2] The collection of the second German North Pole Expedition also contains one specimen.[3]

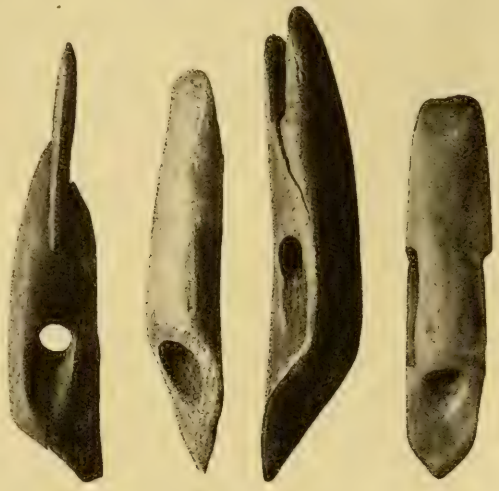


Fig. 6. Type II *b*. $^2/_3$.

b. With one barb:

Mus. No. L. 3531. Renskæret, house 132 (Fig. 6 *c*) length 9·4 cm.; with slit, 2·3 cm deep, and nail hole for blade. A hole has been drilled behind the slit for binding the head, which is partly split; a groove has been made connecting the openings of the hole for the reception of the thread, lest by projecting it should impede the entrance of the harpoon head into the game.

L. 3552. Renskæret, house 134 (Fig. 6 *a*). The harpoon head itself is 6·7 cm. long; it is furnished with a bone blade which projects 2 cm. beyond the head. The blade is 4·2 cm. long and 2 cm. broad; it is broadest 1 cm. from the butt end; it has been fastened with three nails, the hindermost of which is of bone, and still remains in position; the head is somewhat damaged at the tip.

Fig. 7. $^2/_3$.

L. 3675. East shore of Stormbugt, tent 328 (Fig. 7); length 11 cm. Of narwhal tusk, somewhat weatherworn; the one edge of the slit and a part of the shaft socket are wanting; the line hole is large and the line grooves are only faintly visible.

L. 3799. Snenæs, house 406 (Pl. XIII, 6); length 9·7 cm.; there is a slit, 1·6 cm. deep, made by drilling, but no nail hole. This specimen is unfinished; the barb is not pointed and the socket is wanting.

L. 3051. Snenæs, grave 423 (Pl. IX, 3). Miniature harpoon head; length 3·8 cm. In contrast to the preceding specimens it has not had a separate blade. The loose shaft belonging to the head was found with it; it is of bone, 8·4 cm. in length and trilateral in transverse section; it shows marks of having been made by drilling. The front part of the shaft is also preserved; its fore end is split so that the rear end of the loose shaft, which is wedge-shaped, can be inserted in it and fastened by lashing. The weapon has therefore not been intended as a kayak harpoon, but one for use on the ice at the breathing holes of the seals.

L. 3903. Rypefjeldet, house 522 (Fig. 6 *d*); length 7·6 cm. The fore end is cut off square, with rounded angles, while all the other specimens are more or less pointed; a reminiscence of the previous use of heads

[1] Thalbitzer I, p. 347, Fig. 2. [2] Ibid. p. 352, Fig. 6. [3] Koldewey, p. 601, Fig. 6.

without separate blade. The slit is 1·5 cm. deep. The slit and the line grooves are made by drilling. No nail hole.

L. 3947. Rypefjeldet, house 527 (Fig. 6 *b*); length 8·1 cm. The slit is drilled, and only 1·2 cm. deep. No nail holes.

L. 4019. Rypefjeldet; length 7 cm. Much weathered; it is uncertain whether it has had a slit.

Fig. 8. Type III. 2/3.

The Copenhagen museum previously contained three specimens of this type, viz. from Danmarks Ø (70° 26′), from Cape Tobin (70° 24′) and from Skærgaards Halvø (68° 07′).[1] A specimen from the NATHORST Expedition has been figured by G. SVENANDER.[2]

Type III. Broader than it is thick, with vertically drilled line hole; the single line groove lies along the middle of the upper surface. There is no separate blade. There are only two specimens of this type, both of which are rather damaged.

Mus. No. L. 3480. Renskæret, house 132 (Fig. 8); length 12·9 cm. The right side is missing along the greater part of its length; the line of fracture crosses the line hole; it is uncertain whether it has had one or two barbs at the butt end.

L. 4020. Rypefjeldet; length 6·4 cm. On the under side the line hole is widened for the reception of the knot of the line. The line groove is for a short distance cut so deep that it unites with the shaft socket. The butt end is defective; it appears to have had one barb opposite the middle line of the blade, and in front of the barb there is a hole.

Previously to this there existed only two specimens of this type, from Skærgaards Halvø, the one with a barb opposite the margin and thus more closely related to Fig. 8, the other with bipartite barb placed opposite the middle line of the blade, like L. 4020, but with two line holes.[3]

a *b*

Fig. 9. 1/2.

Under Type 2 *b* an unfinished harpoon head (L. 3799) has already been described. There are in addition five rough-hewn specimens, showing only slight preliminary working, viz. L. 3803 and 3804 from Snenæs, house 406 (Pl. XIII, 1—2), length 11·4 and 7·4 cm. respectively; L 4183 and 4128 from the spring settlement near Rypefjeldet (Fig. 9 *a*—*b*), length 10·9 and 8·7 cm. respectively, the latter from tent 607; and L. 3434 from Ren-

[1] L. b. 720 (RYDER I, p. 314, Fig. 13 c); L. 4533. (THALBITZER I, Pl. XV, 2) and L. 4460 (ibid. p. 351, Fig. 5 and Pl. XV, 6) respectively. [2] SVENANDER, p. 40, Fig. 3. [3] THALBITZER I, p. 349, Fig. 4 and p. 348, Fig. 3.

skæret, house 131 (Fig. 10), length 10·2 cm. They are all bevelled at the butt end to form a single barb, and all thicker than they are broad. In Fig. 10, which is of antler, the bevelling is but imperfectly executed.

In the rough-hewn specimens from the west coast of Greenland the work is executed in the same order; the barb or barbs are made as the piece is first cut off, and the general shape then given; the slit is made next, if necessary, then the line hole, and finally the shaft socket.

Types I and II are main types. Their chief features, both the broader type with line grooves in the same plane, and in contrast, the thick, narrow type with marginal line grooves, are widely distributed. In West Greenland[1], and also at Smith Sound[2] these two types occur collaterally. At Angmagsalik Type I predominates, and even if the form is sometimes thick and clumsy, the position of the line grooves is that characteristic of this type. In West Greenland also this is the type for the common harpoon heads; it is in addition the typical Central Eskimo kayak-harpoon head.[3] Further westwards Type II predominates.

Fig. 10. 1/2.

As regards the special development to which these forms have been subject in North-east Greenland, as far as can be judged from the finds made hitherto, the rule is that Type I is not, while Type II is, usually provided with a separate blade The slit is always drilled in the same plane as the line hole. Barbs occur, as a rule, only at the butt end, and not at the sides, as is frequently the case in West Greenland and at Angmagsalik. One harpoon head only of Type I, found by C. Ryder far more to the south, on Danmarks Ø (70° 26′), forms, however, an exception to this rule, having one barb on the right side.[4] In their main features these forms point towards north-west, not southwards towards Angmagsalik.

Judging from the circumstances in which the finds were made, it appears that the differences of type are not dependent on a diffe-

[1] Cf. Svenander, Pl. I, 37—40 and Pl. II, 59—74 for the most typical examples of Type I; Pl. II, 80 approaches very closely to those from N. E. Greenland. For Type II cf. Pl. I, 1—4 and 30. The author draws attention to the fact that Type II is widely distributed all over the west, and regards it as the main type (p. 40).

[2] Kroeber, p. 279, Figs. 13—15; Bessels, p. 362, Figs. 3 and 4.

[3] Cf. Boas III, p. 14, Figs. 4, *a*—*c* and *h*; Boas I, pp. 489—90; the specimen figured on p. 491, in spite of its greater thickness, should also be included in this type. On the other hand, the now uncommon „*siatko*", reproduced after Parry on p. 475, must be referred to the other type. Cf. also Turner. p. 250, Fig. 68.

[4] Mus. No. L. b. 730; Ryder I, p. 314, Fig. 13 *b*.

rence either of time or locality; thus the harpoon heads figured in Pl. XIII, 3—6, all from the same house, include both types. It must be assumed that the two types were used for different purposes; but archæological material alone is not sufficient to solve the question. True, these differences of type prevail at Smith Sound, but then there is at the same time a fairly great difference in the size of the implements, which is not the case in North-east Greenland.

Type III, with the line hole perpendicular to the horizontal plane and a single line groove along the one plane, is represented but sparingly. It implies the use of a single line only, one end of which passes through the hole and is fastened with a knot; the line then follows the line groove on the opposite plane. By this method of fastening, the pull of the line acts exclusively in one direction, and the head is thus apt to be detached before the proper moment. In the above-mentioned specimen from Skærgaards Halvø a very clever remedy has been found for this defect;[1] it has two holes, one below the other, and the line is carried first through the upper hole and then back through the lower one so that it runs along the same plane on which the knot rests; hereby the pull is distributed in both directions.

In West Greenland, harpoon heads of this type with one line are fixed to the ends of the three-pronged salmon fork. Similar specimens have been found on Southampton Island, a locality which, on the whole, is of great interest in its bearing on the present question.

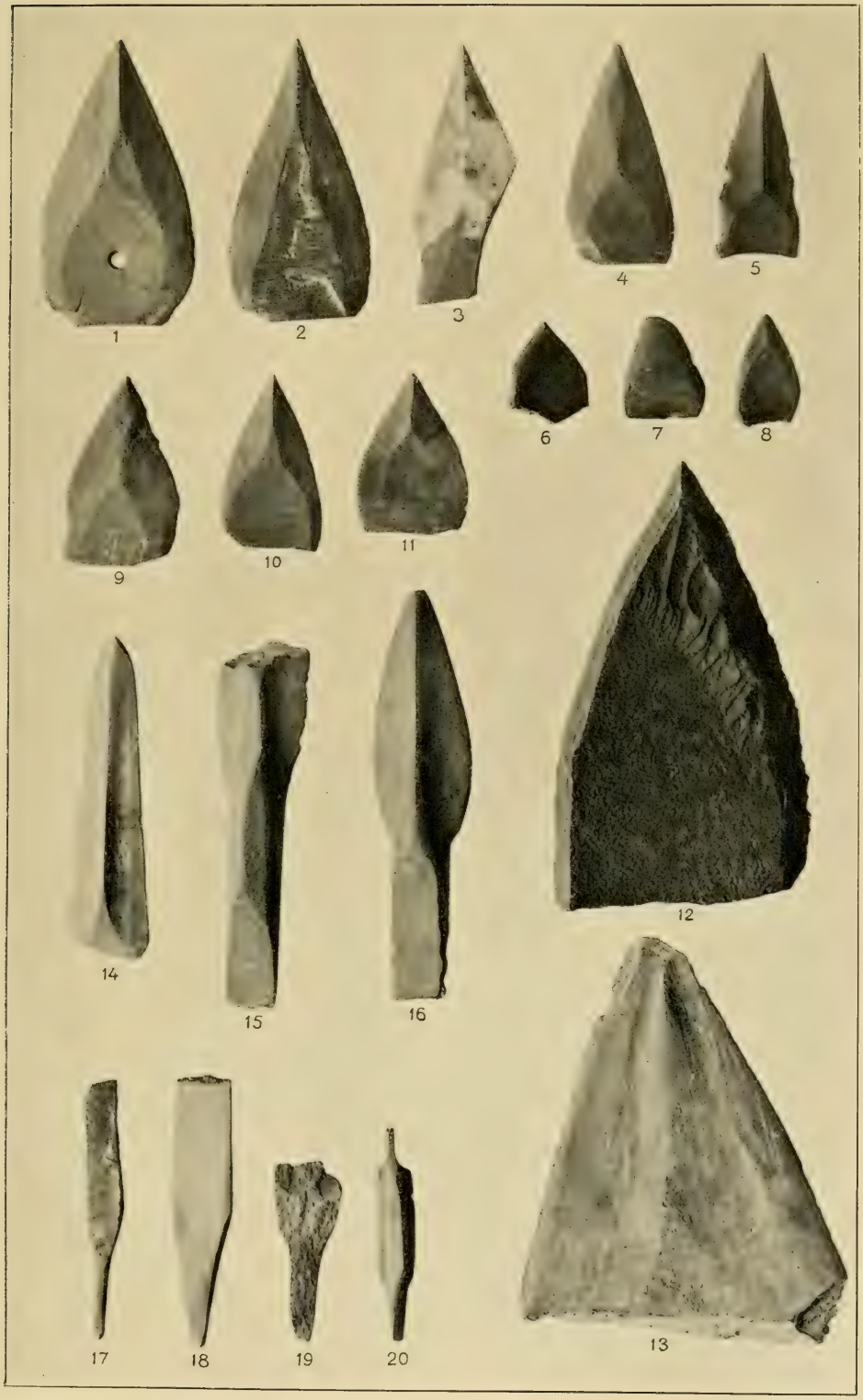
Slate blades of Weapons.

a. Trilateral.

It has been mentioned above that one of the types of harpoon head has usually had a separately-made blade; it was therefore to be expected that the collection would contain such blades. Two of the specimens (Figs. 5 and 6) still have bone blades nailed to them. These are the only bone blades in the collection; of slate blades, on the other hand, there are no less than thirty with the base cut off square. The majority of these should doubtless be regarded as harpoon blades, though some are no doubt intended for lances and arrows; however, since no definite line of demarcation can be drawn between them, it is best to deal with them all here (cf. Pl. XII, 2—15 and Pl. XIV, 1—11).

The blades, which are rather thin, are trilateral in form, the one side shaped, by grinding, into three faces, so that three

[1] THALBITZER I, p. 348; BOAS, III, p. 446, Fig. 248 *l*, *o* and *p*; cf. *k* and *m* from Iglulik.



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ridges diverge from a central point and run to the tip and the two basal angles of the blade respectively; on the other side they are flat. The basal line is always straight; the edges are, on the other hand, more or less curved — usually, however, but slightly so. The basal angles are generally somewhat rounded.

It is probable that two of the larger specimens (Pl. XII, 3 and Pl. XIV, 1) are lance blades; the edges are more sharply curved; they are broadest some distance above the basal line; thus the edges converge rather highly towards the base. The largest of them (Pl. XII, 3), from Snenæs, house 406 (L. 3768), is 8·2 cm. long; its greatest breadth, 4·5 cm., occurs 3 cm. from the base, which is only 3 cm. broad. The other, from the spring settlement at Rypefjeldet (L. 4159), is 6·4 cm. in length; its greatest breadth, 3·4 cm., occurs 1·5 cm. from the base; a nail hole is drilled in the line of maximal breadth.

As regards the rest of the blades, their length varies between 2·3 cm. and 7·2 cm., while their breadth varies only between 2 cm. and 3·3 cm. As may be seen, their breadth is fairly constant; thus the longer specimens are more slender than the shorter ones.

The number of these stone blades is very considerable, especially in view of the small number we previously had from these regions. The second German North Pole Expedition brought home two specimens from Mackenzie Inlet (73° 20′)[1], and the Danish Expedition under Captain C. Ryder six, viz. one from Cape Stewart (70° 27′)[2] and five from Danmarks Pynt (70° 26′)[3].

Of all the 38 stone blades of this type from north-east Greenland, only three have nail holes[4]. Even if we assume that the 14 blades found in the small wooden bowl in house 406 near Snenæs (see p. 376) are not quite ready for use, yet it is evident, that as a rule the blades have not been fastened with nails. They have probably been cemented with a substance similar to that used by the Central Eskimo[5]. The harpoon heads also point in this direction, only the two with bone blades having holes for nailing.

As regards the position of the harpoon blade in relation to the line hole, a theory has recently been advanced[6] to the effect that as long as the blade was of stone it was very valuable, being made of a material often rare, and always requiring great labour in ex-

[1] Koldewey, p. 603, Figs. 7—8. [2] Ryder I, p. 315, Fig. 15 *b* (L. b. 759). [3] L. b. 723, 727 and 728; Ryder I, p. 309, Fig. 8. [4] Pl. XII, 9; Pl. XIV, 1 and Ryder I, p. 309, Fig. 8 to the left. In the Museum the last-mentioned has afterwards been completed by being put together with another fragment; it is now 3·4 cm. in length and 2·5 cm. in breadth, with the hole for nailing 1·3 cm. from the basal line. [5] Boas I, pp. 618 and 626. [6] Porsild, pp. 609—611.

ecution; in addition, it was more fragile. Therefore the blade was placed transversely to the line hole, so as to receive the pressure on the edge and not on the face. The iron blade, which stands a greater pressure, could, on the other hand, be turned in the plane of the line hole and receive the pressure on its face.

This theory does not agree with the conditions prevailing in North-east Greenland; as already mentioned, all the harpoon heads with slits had the latter placed in the plane of the line hole, although they can hardly have had iron blades[1].

It is probable that the smallest of the above-mentioned blades, as for instance Pl. XIV, 6—8, were blades of arrowheads, but no definite line of division can be drawn. Thus an examination of the iron blades on the West Greenland harpoon heads in the National Museum[2] will show that they vary from 2·2 to 6·7 cm. in length, and from 1·9 to 3·4 cm. in breadth; on the other hand, the dimensions of the arrowheads rise as high as 6 cm. in length and 3 in breadth, a size which corresponds broadly with that of a pair of Eskimo stone blades known to have been used in hunting whales and larger seals[3].

A preliminary stage is illustrated in Pl. XIV, 12. The slate is only roughly fashioned into the desired shape; the edges are still thick, and the grinding has not been begun. The specimen, which is 9·8 cm. in length and 5·7 cm. in extreme breadth, was found in tent 485 on the western camping ground near Sælsøen[4].

b. Slender, leaf-shaped.

There are a few slate blades of different shape, with a slender blade and a short, flat tang tapering at the rear end.

L. 3767, Snenæs, house 406 (Pl. XII, 2); length 11·3 cm., the blade, which is thin, has an extreme breadth of 2·3 cm.; the tang is furnished with a nail hole 2·8 cm. from the butt end.

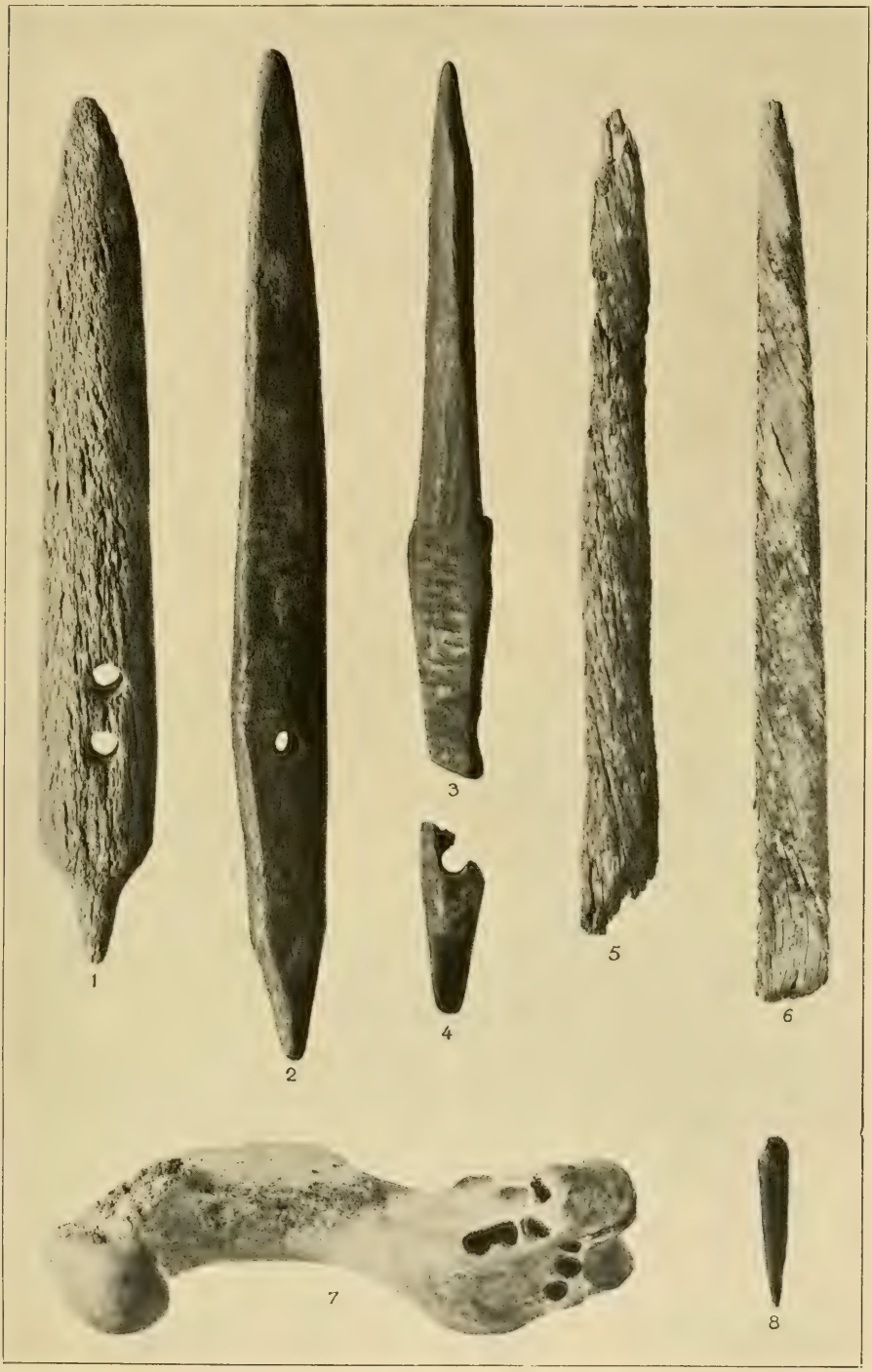
L. 3469, Renskæret, house 132 (Pl. XIV, 16); length 9 cm.; the blade, which is thicker than the preceding one, is 2·4 cm. in extreme breadth; the tang, which is 1,2 cm. broad, has at the edges near the rear end two pairs of notches for lashing.

[1] In the National Museum in Copenhagen are four harpoon heads with stone blades from West Greenland; all of them have the blades placed in like manner in the plane of the line hole.

[2] Those in which the stone blade still remains fixed in the slit are too few to enable us to draw any conclusions from them.

[3] One was found in 1699 on the coast of Greenland in a whale (JOH. ANDERSON, p. 294, cf. Fig. at p. 286); another in the National Museum in Copenhagen (Mus. No. 21) was in 1793 cut out of a bearded seal *(erignathus barbatus)* at Egedesminde; it is 6 cm. in length and 4 cm. in breadth.

[4] THOSTRUP, pp. 295 et seq.



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L. 4135, Rypefjeldet, spring settlement, tent 609 (Pl. XIV, 15). Like the preceding, but without notches; the fore end wanting; present length 8·1 cm.; extreme breadth of blade 2·1 cm.; tang 1·2 cm. in breadth.

These slate blades, both in form and mode of attachment to the shaft, are closely related to the bone heads described on p. 362 as arrowheads. Nor is the breadth of the tang greater than in these. The reason why I nevertheless cannot regard these specimens as arrowheads is that one of them, that found on Snenæs, is furnished with a nail hole. This method of attachment between head and shaft is unknown in arrows. Judging from the finds, no bone foreshaft had been inserted. The small group, peculiar to North-east Greenland, which has been further supplemented by a specimen from the NATHORST Expedition[1] must be left for future consideration, when further finds may possibly bring shafted specimens to light.

Loose shafts and Foreshafts of Weapons.

As is well-known, kayak-harpoons for throwing are furnished with a loose shaft which is connected to the shaft itself by means of a movable joint; this is absent in ice-hunting harpoons, used for thrusting when hunting seals at breathing holes. In these, only the harpoon head can be detached, while the bone piece between the head and the shaft is spliced to the latter and is thus transformed from a loose shaft into a foreshaft. It is then of course superfluous: and we also find, at Angmagsalik, the harpoon head placed directly on the pointed fore end of the shaft[2].

In North-east Greenland, on the other hand, these bone pieces belonging to ice-hunting harpoons are found, and are represented in the collections by several specimens, of very unequal size.

L. 3103, Eskimonæsset (Pl. X, 5). A 42·6 cm. long piece, circular in section, of a narwhal tusk, 2·9 cm. thick at the base and tapering towards the rounded tip upon which the harpoon head is placed. At the butt end it has a bevelled plane, 10 cm. long, for application to the shaft.

L. 3120, Thomas Thomsens Næs (Pl. XV, 5). Similar to the above, but shorter and somewhat damaged at both ends. Length 22·7 cm; extreme thickness 2 cm. The bevelled plane is now only 3 cm., but was probably originally 5 cm. long.

L. 3187, Syttenkilometernæsset (Pl. XX, 9); length 42 cm., extreme thickness 2 cm. Very similar to L. 3103, but the oblique splice 9·6 cm. long has a notch half way down which must have fitted on to a corresponding notch on the shaft, to prevent the planes from slipping away from each other during the thrust.

The specimens in question are all circular in section, and the oblique splices terminate in a fine edge at the butt end. Herein

[1] SOLBERG, Pl. 9, 8.
HOLM, Pl. XV, Fig. 2 from the right; THALBITZER II, p. 420, Fig. 116.

they differ from the following specimens, the edges of which are more or less thick; they have been fastened to one side of the shaft, which in this case has had a notch, affording a plane for application to the butt end of the bone piece, and to prevent it from slipping[1].

L. 3187, Syttenkilometernæsset (Pl. XV, 6); length 25 cm. It is made of the side of a narwhal tusk, so that the butt end, in transverse section, is almost rectangular, being 2 × 1·2 cm. True, it terminates thinly like the above mentioned specimens, but the butt end, which in the preceding specimens sloped to a fine edge, consists in this case of a plane about 5 mm. thick for application to the shaft.

L. 4027, the winter settlement at Rypefjeldet (Pl. XV, 3). Made of antler. It is circular in transverse section along the greater part of its length its extreme thickness is 1·8 cm.; it tapers towards the tip, where it ends conically. But 8 cm from the butt end it widens abruptly, and becomes rectangular in section; this part is 2·4 cm. broad at the front, but narrows posteriorly to 1·4 cm. In this part the plane which was applied to the shaft is smooth, while the three other planes are roughened to increase the security of the lashing[2].

The larger pieces of bone are rather markedly curved. It is possible that, as among the Central Eskimo, they have been curved intentionally to facilitate the detachment of the harpoon head[3]; but at any rate the curvature has doubtless increased in course of time, owing to their lying exposed to the influence of the weather.

The National Museum already contained two specimens of this kind from Cape Tobin[4]. A third specimen is in the Museum für Völkerkunde, Berlin[5]. All three are circular in section and rather short, with a bevel at the butt end, in front of which there is a hole, probably for the reception of the fore end of a thong which ran down along a part of the shaft, as is customary at Smith Sound; between this thong and the shaft the harpoon line is tucked to keep it tight[6].

It would be natural in this connection to describe the fragment, of narwhal tusk, illustrated in Pl. XVI, 2, (L. 3561, from Renskæret, house 134). It has a bevelled plane, 9 cm. long, at the butt end; in this case, how-

[1] This mode of attachment to the shaft is seen in an ice-hunting harpoon from Smith Sound, in the National Museum at Copenhagen.

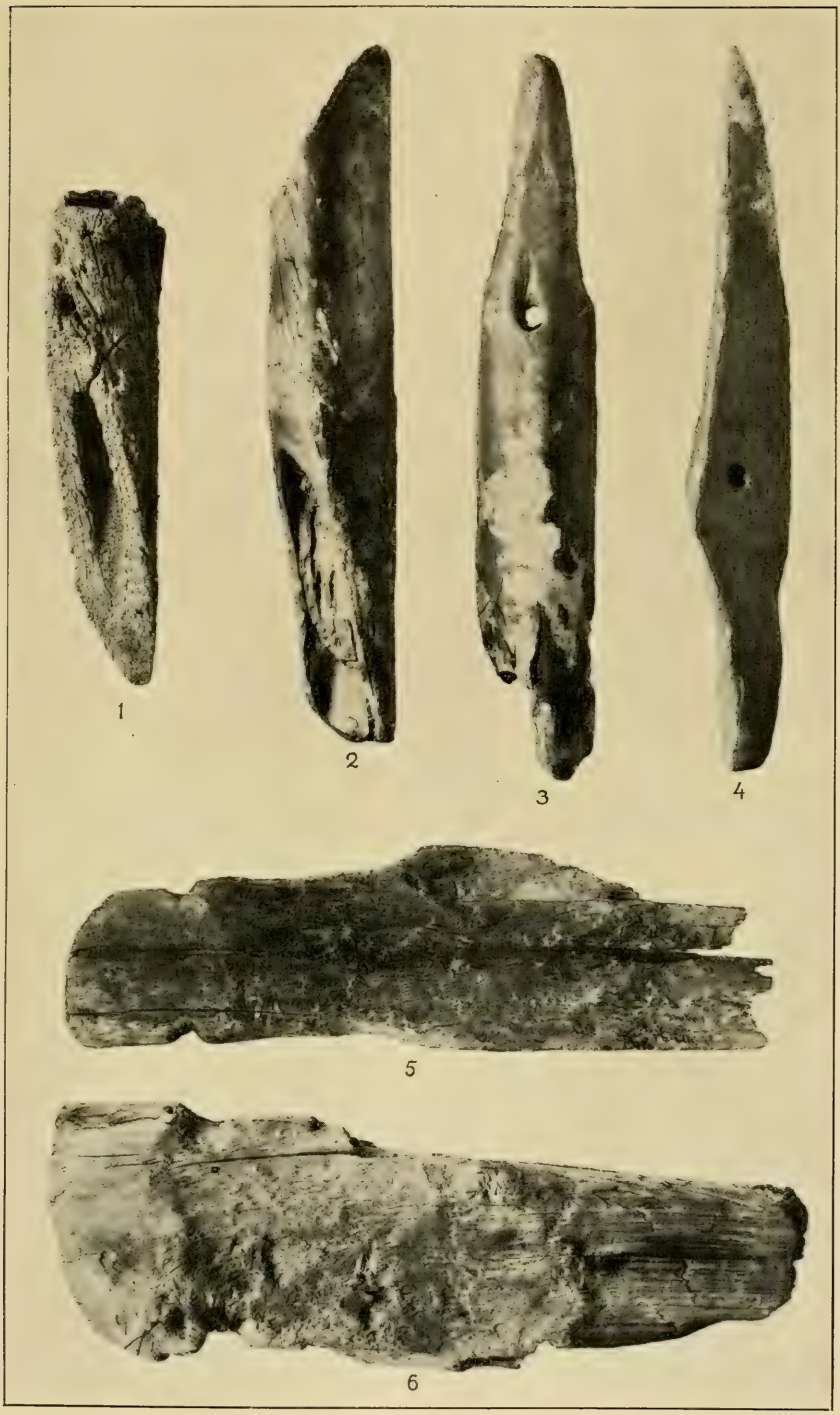
[2] L. 4033, from the same place as the latter, may perhaps also be regarded as a loose shaft of an ice-hunting harpoon. It is made of a narwhal tusk; length 14·3 cm.; as, however, it is broken off at the butt end, its use cannot be absolutely determined.

[3] BOAS I, p. 471.

[4] THALBITZER I, p. 371, Fig. 9,

[5] Museum für Völkerkunde, Berlin, No. IV A 208; it is 11·3 cm. long.

[6] Cf. KOLDEWEY, p. 603, Fig. 9.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ever, the shaft has not been bevelled and lashed to the surface of the bone piece, but inserted in the natural hollow of the tooth, where fragments of wood are still visible. The fore end is missing; broken off, probably for some considerable length; just above the bevelled surface the thickness is 2·9—3·4 cm.

Here we evidently have before us one of the harpoons, known through older descriptions, in which the bone-piece constitutes the greater part of the weapon [1]. A splendid example of this type [2] was brought home by the second German North Pole Expedition from Little Pendulum Island.

The loose shaft of harpoons for use in kayaks is represented by the following specimens:

L. 3432, Renskæret, house 131 (Pl. XV, 2). Of antler; length 27·5 cm.; nearly rectangular in transverse section; 8·5 cm. from the butt end a line hole has been bored through the broad sides. The broadest part (2·7 × 1·7cm.) occurs immediately in front of this; from here it tapers gradually towards the apex, which is truncated, and towards the butt end, which terminates in a conical tap, 3 cm. long.

L. 3481, Renskæret, house 132 (Pl. XV, 4). A fragment, 5·4 cm. in length, of a specimen similar to the preceding. It is broken off at the line hole, which is situated 4·2 cm. from the butt end and immediately in front of the conical termination; at the posterior margin of the line hole is seen a line groove, extending backward.

The lance, with movable joint between the loose shaft and the shaft, but with a fixed blade, is represented only by one specimen, and this has even been subject to alteration at a later date.

L. 3117 *a*, Thomas Thomsens Næs, near tent 48 (Pl. XV, 1). Length 24 cm.; rounded rhomboid in transverse section. The maximum circumference occurs 3 cm. from the butt, where it is 3·2 cm. broad and 2 cm. thick. From here it narrows abruptly to a conical tang; in the other direction it tapers gradually without losing much in thickness. The tip, for a distance of 3·5 cm., has been pointed by means of a few rough cuts; this is evidently a later alternation made after the tip had broken off; at the extreme point are seen traces of the posterior portion of the blade slit. Two line holes, 2 cm. apart, have been bored obliquely through the broad faces, parallel to each other in the middle line; the anterior hole is at a distance of about 8 cm. from the butt end. On that face where the openings of the holes are furthest from the butt end, short line grooves extend backwards from both openings.

[1] Cf. Ross, Plate opposite p. 102.

[2] Museum für Völkerkunde, Berlin, No. IV A 190; cf. Koldewey, p. 603, Fig. 10. It is 89·5 cm. long and has in 3 places in its rear part holes for the reception of the thong.

As is well-known, in the modern Greenland harpoon and lance the movable joint between the loose shaft and the shaft is not conical in shape; it is framed by two flat surfaces, furnished respectively with only a small projection and socket which fit into each other[1]. The same type of joint is seen in two West Greenland winged harpoons in the National Museum at Copenhagen dating from the middle of the 18th century. On the other hand, the conical joint occurs on the smaller missile weapon, the bladder dart, both in its older form with the long massive bone head[2] and in its later form with an iron head[3]. A short, slender lance with conical joint is found in the National Museum, but there is no complete harpoon of this construction.

The conical joint is a feature of the original Eskimoharpoon, and occurs over almost the whole of the Eskimo region, as also among the Indians in Oregon and in California[4]; the pointing of the butt end of the loose shaft for application to the shaft was a natural mode of attachment, but more difficult to disconnect. The improved type, formed by reducing the tang to a small central projection on a flat surface, exists in both the extreme points of the Eskimo region, viz. Greenland and Bering Strait.[5]

Two specimens of foreshaft for such weapons have been found by the Danmark Expedition:

L 3106, Eskimonæsset (Pl. X, 4). Length 24 cm. In the anterior extremity, which is 2·8—3·2 thick, there is a conical hollow. A line hole is drilled 9 cm. from the front end, and immediately behind it the specimen is cut off obliquely to form a splice, about 13·5 cm. long. The inner surface of the splice is smooth, while the outer surface of this portion has been roughened. The specimen is 2·5—2·7 cm. thick at the line hole.

L 3185, Syttenkilometernæsset (Pl. XVI, 1). Of narwhal tusk, Length 13·5 cm.; thickness 2·7 cm. The line hole is situated only 2·5 cm. behind the anterior extremity; the bevel for the splice begins immediately behind it. The natural hollow of the tooth extends through the entire length of the specimen, and has served to receive the projection of the loose shaft.

So far as may be judged from the material hitherto available, the point of contact of the two types of harpoon and lance falls in the districts around Scoresby Sound. The older type, with conical joint connection, is met with as far south as Danmarks Ø (70° 26′)[6] and Dunholm (69° 54′)[7]. Of the newer type with squared surface

[1] MASON I, Pl. IV and p. 256. [2] SVENANDER, Pl. 4. [3] FABRICIUS I, pp. 159 et seqq., the Plate, Fig. 8. [4] Cf. MASON I. [5] MASON I, p. 208 and Pl. 10. [6] RYDER I, p. 313, Fig. 12 *b* (L. b. 721). [7] THALBITZER I, Pl. XVI, 12—13 (L. 4511 and L. 4500) and p. 444, Fig. 45 (L. 4507—09).

and projection we have specimens from Cape Stewart (70° 27′)[1] and from Danmarks Ø;[2] also of unknown origin, a foreshaft from the German Expedition[3] and a loose shaft from the NATHORST Expedition.[4] The specimen from the level country west of Hvalrosodden (76° 56′ N. lat.) which was afterwards turned into a sledge-buckle (illustrated in this paper as Fig. 24) must undoubtedly be regarded as an isolated instance of the occurence of this new type far to the north. All the specimens, the origin of which is known for certain should, however, be most properly regarded as transitional forms, the projection being fairly large and the surface fairly small.

Shafts for Weapons.

As regards the shafts for the larger weapons the finds give us but scanty information. Among the many wooden pieces brought home there are only three characteristic fragments of shafts for harpoon or lance, all from Syttenkilometernæsset.

L. 3221 (Pl. XVII, 1) is 18·7 cm. long. The diagonal splice, which extends over the entire length, is furnished with a notch; at the thin end another notch is seen on the outside — to the left of the figure — which is intended to prevent the lashing from slipping. Three nail holes are seen between the two notches; in two of them wooden nails still remain fixed; at the other and broken end of the specimen a third peg is seen. The shaft has been elliptical in transverse section; the breadth is 2·8, and the thickness has probably been about 4·5 cm.

L. 3222 is 36 cm. long. The wood is much weathered, so that the knots project. Bevelled surfaces extend from both ends to about the middle, where the thickness is less than it was originally; the breadth is 2·8 cm. The splices are not furnished with nail holes.

The third fragment (L. 3223, Pl. XVII, 2) is 23·3 cm. in length. The splice, which extends almost through the entire length has five nail holes, two of them with wooden nails still in place. Breadth 3·2—3·6 cm.; thickness 2·3 cm.

However scanty this material may be, it is nevertheless not entirely devoid of importance, being hitherto the only material which can give us information regarding the dimensions of the lar-

[1] Mus. No. L. b. 747 (RYDER I, p. 313, Fig. 12 *a*) and L. b. 749, both for harpoons; loc. cit. p. 314, Fig. 13 *d* (L. b. 748) for lance, and p. 315, Figs. *a* and *e* (L. b. 763 and 792) for lance. The author has not noticed that *a* and *e* are really fragments of one loose shaft with a total length of 44 cm.; it has been broken during use, and lashed together. [2] L. b. 726. [3] KOLDEWEY p. 604, Fig. 17. [4] STOLPE, Pl. IV, Fig. 14 to the left.

ger shaft for weapons. Even if the latter do not attain the dimensions of the weapons of the district further south as regards diameter, yet they are in no wise slender; moreover, their joints and finish show much care and accuracy.

Finger Rests for Weapon Shafts.

In weapons where the throwing board is not used, a bone peg is placed on the shaft at the point where it is grasped by the hand, to serve as a support during the throw.

In the colonized part of Greenland these pegs are now mortised into the wood, but at Smith Sound they are usually lashed to it.[1] This is also the case with the three specimens found in the collection of the Danmark Expedition. In shape they resemble an oblique pyramid with flat base, applied to the shaft so that the apex inclines towards the butt end; they are provided with 1—2 holes for lashing on to the shaft.

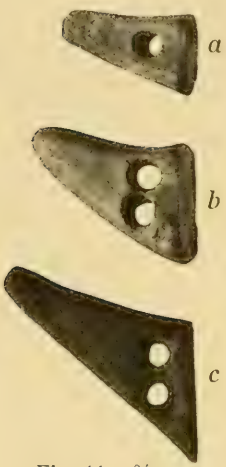


Fig. 11. 2/3.

L. 4029, Rypefjeldet (Fig. 13 *a*). Base 1·6 × 1·3 cm.; height 2·7 cm., reckoned at right angles to the base. One hole.

L. 4028, Rypefjeldet (Fig. 13 *b*). Base 2·4 × 1·6 cm.; height 3·1 cm. Two holes.

L. 3493, Renskæret, house 132 (Fig. 13 *c*). Of antler; narrow. Base 2·9 × 1·1 cm.; height 3·8 cm. Two holes.

In the National Museum in Copenhagen there are some specimens of such hand rests from the northern part of colonized West Greenland down to Disco Bay.

Among the Central Eskimo the lashed finger rests are of a different shape[2]; from the West Eskimo, on the other hand, there are forms similar to those described above[3] together with the Central Eskimo type. Above (p. 376) it has been suggested that the bear illustrated in Fig. 2 *a* should probably be regarded as a particularly fine specimen of this kind.

[1] KROEBER Pl. XI, 1—2.

[2] BOAS III, p. 17, Fig. 11. The attachments for lines figured in the same place in Fig. 10 are certainly more like our specimens, but the author mentions particularly that here the base is concave; moreover, the fact that his specimens *a* and *c* are grooved for thongs shows that they must, unlike the items from our collection, have been fastened to a very narrow object.

[3] NELSON, Pl. LVII *b*, 27 and 28 and 31 and 32. Cf. MASON I, Plates 8 and 9.

Ice Picks.

To the butt end of the shaft of the ice-hunting harpoon a pointed piece of bone is lashed; it is used for enlarging the hole in the ice when the seal is struck with the harpoon and has to be hauled up.

Of such ice picks the present collection contains only one specimen, L. 3557, from Renskæret, house 134 (Pl. XVI, 3). It is made of antler, semicircular in transverse section. At the butt end, for a distance of 6·5 cm., the ice pick has been pointed by paring away the sides, so that here it is trapezoid in transverse section; this part is intended for lashing to the shaft. Immediately below it is a hole with grooves running forward for the reception of a line which should further secure the connection between the ice pick and the shaft. The apex is broken off, the present length is 19·5 cm.; breadth 3·3.

There exists one more specimen of this implement from North-east Greenland, brought home by Koldewey[1]. From Angmagsalik ice picks of bone are known, although there iron specimens are in the majority. In the colonized part of West Greenland, bone ice-picks have long since been replaced by European steel chisels, but the National Museum in Copenhagen contains some 10 older specimens of bone, all from the regions north of 68°.

Sealing Stool.

In hunting on the ice, when the hunter is obliged to wait for hours at the breathing hole of a seal, he always takes a wooden stool with him.

The collection contains an unusually large and well-made specimen of these sealing stools, found on the east shore of Stormbugt, in the ruins of a tent (Fig. 12)[2]. The seat, which is semicircular in form, is deeply hollowed, maximum depth being 15 cm., so that it affords a comfortable rest. It was damaged while in use; the part of the seat which now remains has been broken and lashed together in six places, the holes and grooves made in the process of mending are still visible; the back part of the existing piece has in a similar manner been lashed in four places to the edge now missing. Moreover, two nails have been driven into the middle of the front edge to secure a splinter that had been split off. All this shows that considerable trouble has been taken to repair this stool, the manufacture of which had required a large

[1] Mus. f. Völkerkunde, Berlin, IV A 198. 25 cm. in length, of this the diagonal splice constitutes 9 cm.; as in the specimen mentioned above, the line hole is situated immediately behind the splice.

[2] Mus. No. L. 3715.

block of wood and much time, and which would therefore be of great value.

The hollowed seat itself is 50 cm. in length, 34 cm. in present width (was originally 37—40 cm.) and 2 cm. in thickness. In the front it has a projection on either side, about 10 cm. long, about 6 cm. wide and 5·5 cm. thick, into which the fore legs have been inserted; including these the entire length of the front edge is 71·5 cm. There has no doubt been a similar projection for the reception of the back leg.

At the front edge, on either side and about 7 cm. from the edge of the seat, is drilled a vertical hole with grooves directed towards the edge. Similar holes are seen in a seat in the Christiania Museum [1].

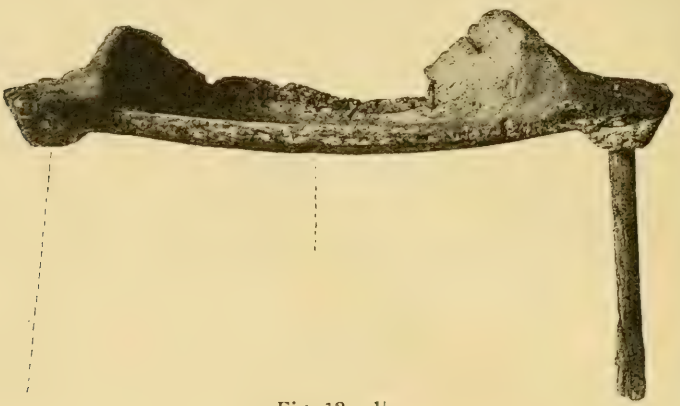


Fig. 12. 1/8.

In both projections, also, are seen 2 pairs of holes running from the upper side outwards to the lateral edges and connected in pairs by a groove. The reason for these holes will be discussed below.

The height of the stool was 34 cm.; only one leg now remains; it terminates at the upper end in a conical tap which has been inserted into the projection of the seat. The other part of the leg is rounded in form, thickest (3·2—3·3 cm.) at the ends and lessening gradually in diameter towards the middle, where it is about 2·5 cm. thick. 1—1·5 cm. above the bottom edge a groove encircles the leg, and 4 cm. below the seat a hole is drilled transversely through it.

The groove below has no doubt served for fastening a piece of skin under the leg to prevent its creaking and thereby attracting the attention of the seal; it has probably also served to connect the legs with one another. The holes at the front edge of the seat, in the lateral projections and in the upper part of the leg, were doubtless likewise intended for the insertion of lashings connecting the

[1] No. 12398, found by the SVERDRUP Expedition in Axel Heibergs Land.

seat and the legs. This precautionary measure, which is unnecessary in the case of the low stools, is of importance as regards the higher specimens, and becomes a necessity when the frame is slender, as is the case at Smith Sound[1].

This stool is unique both as regards size and form. The hollowed seat indicates that it was evidently intended to sit on, while the others found in North-east Greenland appear to be low stools to stand on: the stools from Cape Tobin[2], two stool-legs in the Christiania Museum and one leg brought home by the RYDER Expedition from Danmarks Ø have a height of only 10—13 cm. The seats found by the NATHORST Expedition[3] belong to the same type, as also the seats from Grinnell Land[4] and Heibergs Land[5]. From Smith Sound, BESSELS[6] figures a similar low stool; on the other hand, the high, slender stools now used differ greatly from those of North-east Greenland. At Angmagsalik and at Point Barrow the stools are, it is true, of a similar form, but considerably higher. In the former place they are used both to sit on and to squat on with the feet upon the seat.[7]

The one-legged stool with footstool used in West Greenland is a local form[8]. The footstool is probably allied to the North-east Greenland type; the stool, I am inclined to believe, is a product of European influence; the squatting position is a position of rest so natural to primitive people that they would hardly make such an alteration on their own accord, especially as it would result in two implements out of one.

The sealing stool from the east shore of Stormbugt is likewise so low that the man when sitting on it is practically in a squatting position. For this reason, the seat slopes downwards from front to back and is deepest at the back edge.

Prongs for Bird dart and Fish spear.

Strangely enough, among the finds from North-east Greenland there is not a single object which can with certainty be identified as a point for a bird dart, either of the thick bone pattern as used in West Greenland before the iron point was intro-

[1] Cf. KROEBER, p. 269, Fig. 1. [2] THALBITZER I, pp. 427—435. [3] NATHORST, pp. 346—347. [4] BOAS III, p. 463, Fig. 265. [5] THALBITZER, loc. cit. [6] BESSELS, p. 359, Fig. 1. [7] MURDOCH I, p. 255.

[8] HANS EGEDE, Plate opposite p. 59. The height of two foot-stools of this kind in the National Museum is 11 and 14 cm. The seats are 33·5 × 23 cm. and 41·3 × 16·7 cm. respectively. The seat of the corresponding one-legged stools consists of quite a narrow and somewhat curved piece of wood with rounded ends, 28 cm. long and 5·5—6 cm. broad. The height of the one is 54·5 cm.; at the bottom it is furnished with an iron spike; the other is defective.

duced[1], or of the thin slender kind found at Angmagsalik[2], which is evidently modelled on the iron point. The object described by W. THALBITZER[3] as being possibly a point for a bird dart is the point of an arrow[4].

Fig. 13. 1/2.

The presence of the bird dart in North-east Greenland is thus proved only by the discovery of the prongs of the shaft. They have previously been found by KOLDEWEY, RYDER and AMDRUP[5]; three specimens in all. They differ from the type otherwise known from Greenland by having, in addition to the barbs directed inwards towards the shaft, a barb directed outward at the extreme tip[6]; they are also larger and stronger.

Of the same powerful form is the specimen illustrated in Fig. 13 (L. 3322) from Maroussia, house 141, but it has, as customary in Greenland, all its barbs directed inwards. It is furnished with three barbs, increasing in size towards the base; they have been made by drilling; this is still shown by traces of holes found at the inner angles. The specimen is defective at the hinder end; present length 13·8 cm. Near the present base is a notch at the outer edge which has served for lashing on to the shaft.[7]

Fig. 14 (L. 3653) from the east shore of Stormbugt, is a slenderly formed object which has probably belonged to a bird dart used as a toy. It is biconvex in section, sharply curved and without barbs. At the base, the inner edge is bevelled for application to the shaft. About 4 cm. from the base is a hole for lashing. It is 12·3 cm. long.

Fig. 14. 1/2.

Fig. 15 (L. 4023) from Rypefjeldet is probably a prong belonging to a salmon spear; it differs from the prong for a bird dart *inter alia* by its thick outer edge. The specimen is defective at the tip, where one inwardly turned barb is seen. It is nearly rectangular in section, the inner edge, how-

[1] SVENANDER, Pl. 5, 169; cf. SOLBERG, p. 68.

[2] HOLM I, Pl. XIV; THALBITZER II, p. 435, Fig. 137.

[3] THALBITZER I, pp. 366 et seq.

[4] Cf. Meddelelser om Grønland, vol. LIII p. 420.

[5] KOLDEWEY. p. 605, Fig. 18; RYDER I, p, 316, Fig. 16; THALBITZER p. 372, Fig. 16.

[6] Prongs with outward directed barbs are known from the Eskimo about Bering Strait; cf. NELSON p. 150, Fig. 42 *c*.

[7] Here belong probably also the objects, Mus. No. L. 3843 from Snenæs, house 407 and Mus. No. L. 4154 from the spring settlement at Rypefjeldet, tent 618, the latter for a toy dart; they are 14·9 and 5·9 cm. respectively. Both of them are, however, so weathered that it is impossible to identify them more exactly.

1/2

ever, is rounded. It tapers towards the base where the inner edge is bevelled for application to the shaft. 7 cm. from the base is a notch at the outer edge for a lashing. Present length 15.3 cm.

Fig. 15. 1/2.

The following prongs belong to fish spears:

L. 3696, from the camping ground on the east shore of Stormbugt. A quite thin and flat point of bone with two (doubtless originally three) barbs along one edge. Somewhat weathered and broken off at the hinder extremity. Extreme breadth 1·4 cm., present length 11·3 cm. It recalls the prongs of the sea-scorpion spears used at Angmagsalik.[1]

L. 4184, from the spring settlement at Rypefjeldet (Fig. 16). An outer prong, length 12·3 cm., extreme breadth 1·3 cm., and 1 cm. thick, elliptical in section, with a small inwardly turned barb at the tip. At the hinder end, the edge which faced the shaft has been bevelled for application to the same.

The prongs for fish spears illustrated on Pl. XVII, 3—4 were found on Syttenkilometernæsset, Fig. 4 in tent 78, Fig. 3 among the objects found scattered about the settlement. They are peculiar in that they are made of wood, and so far as I know, they are the only prongs hitherto found made of this material; it may therefore be justifiable to regard the two finds, each as a complete set, even if the prongs are not exactly alike. The material and the slender structure render it probable that they were made for a child.

Fig. 16. 1/2.

L. 3215—17 (Pl. XVII, 3). The outer prong to the right on the plate is complete, 15 cm. long, with an inwardly directed barb and a plane, 6 cm. long, for application to the shaft. In front of this plane the breadth of the prong is 8 mm. and the thickness 9 mm. The outer prong to the left is now 14·9 cm. long, but its tip with the barb is missing; the surface for application to the shaft is 8 cm. long; at the front end of the latter the breadth and thickness are 9 mm. This prong differs from the former in having a notch at its outer edge, immediately above the joining surface to receive the lashing. The central prong is 11·3 cm. long; the part which has been inserted into the shaft is rectangular in transverse section and tapers gradually towards the hinder extremity, now broken off; the point is slender, conical, and furnished on both sides with a barb; the two barbs are not equal in size.

L. 3151—53 (Pl. XVII, 4) is more slender than the previous set. One of the outer prongs (the one to the left on the plate) is 14·2 cm. long, the joining surface 7 cm.; at its fore end, the breadth is 5 mm. and the thickness 8 mm.; the other side prong is 13 cm. long and has a tapering splice, 6·5 cm. long, at the fore end of which the breadth is 6 mm. and the thickness 5 mm.; both specimens have a small inwardly directed barb. Of the middle prong, only the front part for a length of 6·7 cm. is

[1] Holm I, Pl. XV *e*; Thalbitzer II, p. 435, Fig. 140.

preserved; it is quite flat, only 2 mm. thick, and has an extreme breadth of 6 mm.; like the one of the preceding set it has barbs, of unequal length, on either side.

The bone piece illustrated in Fig. 17, from house 144 on Maroussia, is the only one of its kind from North-east Greenland. It should be compared with some specimens from the districts around Southampton Island, which BOAS undoubtedly rightly described as barbs of side prongs of a salmon spear.[1] It is true, the barb from Maroussia is somewhat larger than those figured by BOAS, but it has all the features characteristic of the barbs in question.

Fig. 17. 1/2.

L. 3363. Length 9·3 cm., extreme breadth 2·2 cm., made of antler. It is very flat, and the convex edge is almost sharp, the concave rather more rounded. In front it has a projection which has rested against the end of the prong; behind the barb there is a plane surface 2·5 cm. long, which has been applied to the inner side of the prong, and two holes for lashing it thereto.

Similar barbs are also known from among the West Eskimo.[2]

This series of barbs may be concluded by the specimen illustrated in Pl. XVI, 4 (L. 3551), from Renskæret, house 134 which must presumably be regarded as the roughly shaped prong of a bird dart. Its length is 19·4 cm. The outer edge, with the exception of a small incurvation 4·5 cm. from the butt end, is rather evenly curved. The maximum breadth, 2·9 cm., occurs 7 cm. from the butt end; from there the specimen gradually diminishes in breadth towards both ends, in a somewhat concave line. A little in front of the broadest part a perforation has been begun, and another on the reverse surface 1·5 cm. from the butt end.

On comparing this specimen with the prong found near Cape Tobin[3], we find not only the two holes which have been commenced in our specimen, but also a notch at the outer edge corresponding to the incurvation in the unfinished specimen from Renskæret. Our specimen is but roughly-hewn, the edges are not shaped and there are no barbs; only the position of the holes and notch for attachment to the shaft have been indicated to serve as a guidance during work.

[1] BOAS III, p. 391, Fig. 185, especially *a* and *b*; compare the prongs corresponding to them (Fig. 184).

[2] Cf. NELSON, Pl. LXVII, 5; cf. p. 150, Fig. 42, 1.

[3] THALBITZER I, p. 373, Fig. 16.

Weapons and Implements for hunting on Land.

The wooden Bow and Implements for twisting the Backing.

The Eskimo bow stave has two main forms; it is either straight or has its ends bent up like the Tatar bow. Both forms often occur in the same regions.[1]

In finds from West Greenland the straight form is most common.[2] According to the eleven bow staves in the National Museum at Copenhagen, it may be described as a rather flat bow with usually only a slightly rounded belly; the thickness gradually increases towards the grip; the breadth does not vary greatly; the grip, it is true, is narrower, and the limbs taper towards the end, their extreme part, however, often widening again. None of the specimens preserved have the end-pieces of bone mentioned by Fabricius. The bow varies greatly in length, which is usually considerable. Of nine bows for adults[3], five are from 1·41 to 1·47 metres long; three smaller specimens are 1·21, 1·29 and 1·35 metres respectively; the largest attains the considerable length of 1·59 metres. It has had a backing of cords or sinew; at the point where the shorter strands have been carried round the bow stave, the width of the latter diminishes abrubtly, which prevents the strands from slipping inwards towards the middle; this point occurs, according to the length of the bow, 21—39 cm. from the end.

The "Tatar" form of the bow is, however, also represented, although by only three specimens, viz. two bow staves from Disco Island and one bow with the backing of cords and sinew preserved[4]. The exact origin of the latter is unknown; it was found

[1] Murdoch II; Boas I, pp. 502 et seq.; Mason II. Since this was written has been issued "The Greenland Bow" by Kaj Birket-Smith (Medd om Grønl. vol. LVI).

[2] Fabricius II, pp. 235 et seq. The same form is seen in two paintings in the Museum, from 1654 and 1724 respectively (cf. Bahnson, vol. I, p. 232).

[3] One which is only 98 cm. must be regarded as a child's bow.

[4] Birket-Smith II, p. 15, Fig. 2 *a*.

in the Royal Museum (Det kongelige Kunstkammer) in 1737 labelled: "Greenlandic". The same form of bow is indicated in an illustration in JOHANN ANDERSEN.[1] As this is the form of bow stave we meet in North-east Greenland, its main form will be described here on the basis of the West Greenland material, in order that we may gain a better understanding of the fragments found by the Danmark Expedition. The backing need not be taken into consideration, as it is wanting in all the specimens to be described in the following.

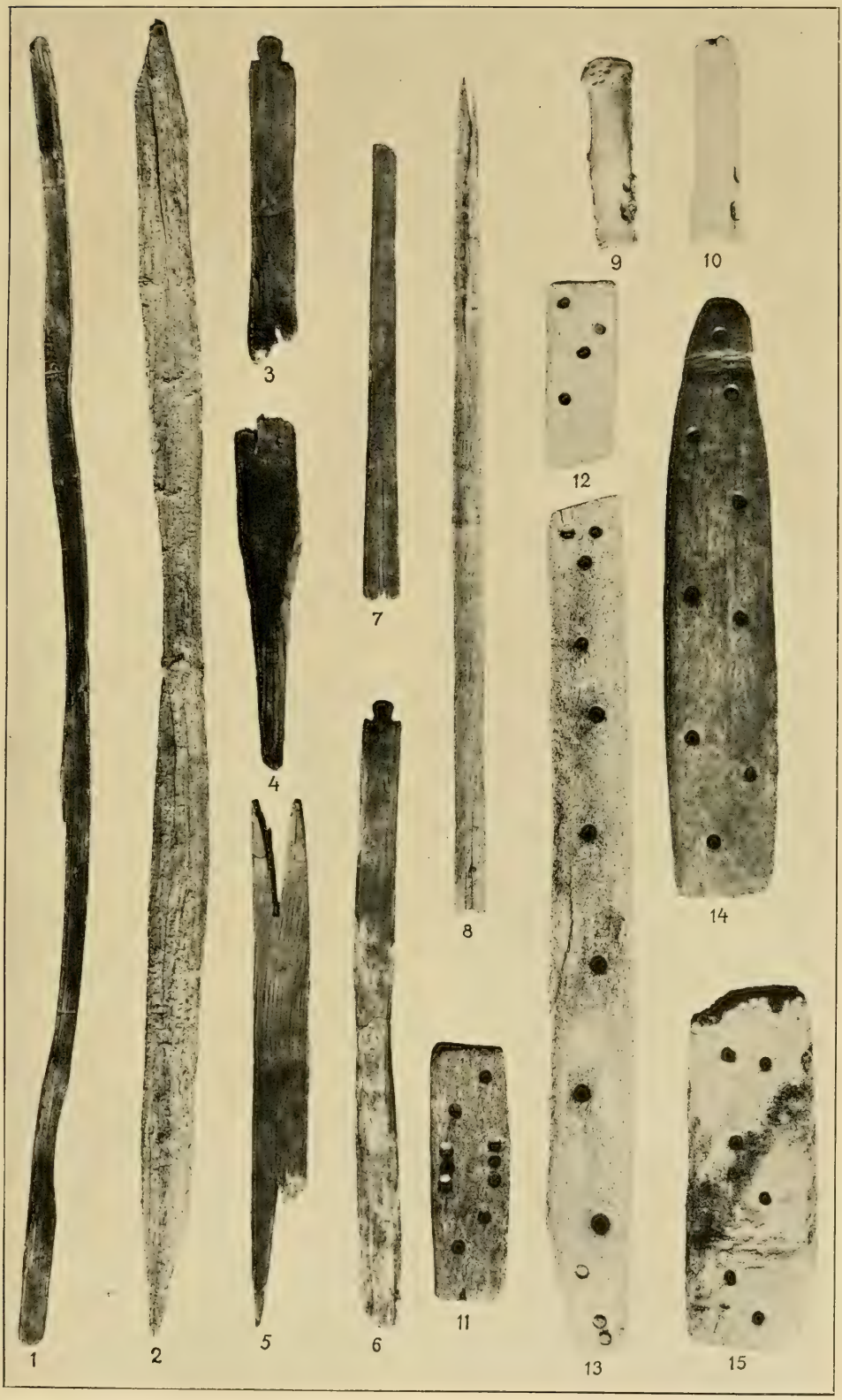
The "Tatar" bow is shorter than the straight variety, being 1·12—1·34 metres long. The length is 2·06—2·14 times the distances between the middle of the bends[2]. The extreme breadth occurs immediately within the bend and decreases thence both towards the ends and towards the grip. It is thickest at the grip; in two cases it is somewhat less thick within the bends than towards the ends. The only complete specimen of the three bows has at the bends a curved piece of bone inserted between the bow stave and the backing; at the grip a piece of whalebone is inserted in a corresponding manner. Two of the bows are in one piece, while one of the staves from Disco is composed of three pieces which have been mortised together in a manner similar to that described below in the case of the North-east Greenland specimens. The straight-formed West Greenland bows in the Museum are made of one piece, with the exception of one in which the two pieces have been joined together not by a mortice, but by means of a bevelled splice. It is, however, of slight importance whether the bow is made of one or several pieces, this being dependent on the greater or less supply of wood.

In the following table are given the chief measurements of the West Greenland bows of this form and of the fragments of North-east Greenland bow staves found by the Danmark and the Ryder Expeditions. As to the bow stave L. c. 1424, C. RYDER[3] is undoubtedly wrong in regarding the small notch at the back as intended for a splice; the specimen does not decrease in thickness towards the fracture; I am inclined to believe that the bow has been in one piece, and that the notch was intended for a piece of whalebone similar to that found on the old West Greenland bow.

[1] ANDERSEN, the plate opposite p. 286. C. RYDER (I, p. 307) drew attention to the two bow- forms from Greenland; but the material in the Museum has increased somewhat since then; at that time there existed only one bent bow.

[2] I. e. the points at either end where the bow is bent up, as in bows of "Tatar" shape.

[3] RYDER I, p. 307.



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		Length			Breadth			Thickness		
		of the entire bow	of the fragment	between the bends	at the ends	within the bends	at the grip	at the ends	within the bends	at the grip
	West Greenland	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.
	L. b. 1 Origin unknown	134		65	3	3·5	2·7	1·3	1·1	1·6
	L. 4568, L. 4569 Disco Island	117		55	2·6	3·2	2·4	1·2	1·4	1·6
		112		54	2·5	3·2	2·6	1·3	1·0	1·6
	North-east Greenland									
Danmark Expedition	L. 3660, L. 3661 East shore of Stormbugt	[88—91]	76·3	43		2·5	1·8	1·2—1·4	1·0	1·5
			30·7			3·3			1·4—1·6	
	L. 3862 Snenæs, near houses 406—407	[103—106]	78	50		3	2·2	1·5	1·1	1·8
	L. 4058 Rypefjeldet, around houses 521—524		19·5		2·8			1·1		
	L. 4059		38			2·7			1·9	
Ryder	L. c. 1424	[150]	94		3·1	3·6	2·5	2·7	1·7	1·5

The figures enclosed in square brackets indicate the conjectured entire length of the bow calculated according to the distance between the bends; as regards L. c. 1424 between the grip and the bend of the bow.

In Pl. XVIII, 2, Mus. No. L. 3862 is shown from the belly. The constriction at the grip is seen, and the pointing of the ends for the lengthening of the bow. On the back, which is not seen in the figure, a shallow, curved hollow, 10 cm. long, has been made along the bends, undoubtedly to receive a piece of bone similar to that found on the old West-Greenland bow L. b. 1.

In Pl. XVIII, 1, Mus. No. L. 3660 is seen in side view. To the right, i. e. on the back side of the stave, are two hollows corresponding to those mentioned above; at the belly is seen the enlargement which forms the grip. The ends are pointed as in the preceding specimen for insertion into the end-pieces, which must consequently have been furnished with slots.

In Pl. XVIII, 3—5 are represented Mus. Nos. L. 4058, 3564 and 3661 respectively. The first is an end-piece of a narrow, slender bow, but which nevertheless probably is a genuine weapon; the lower end of the figure shows the fracture. The other, which is 21 cm. long, 3·8 cm. broad and 1·7—2·2 cm. thick is broken off at the upper end, in the figure; there are two holes at the fracture, indicating that it has been broken while actually in use and strengthened with lashings; the lower end, in the

figure, is pointed for lengthening. The third specimen has a split at each end, but it is evidently not the part which constitutes the grip; this bow must thus have consisted of more than three pieces; at the inner angles of the splits there is a hole evidently drilled to prevent the wood from splitting during the cutting of the slit.

In Pl. XVIII, 6 is figured a fragment, 36·8 cm. long, the end of a narrow and slender bow (L. 3244), found on Syttenkilometernæsset. It is 2·3 cm. broad at the point, tapering to 2·1 cm. at the bend, which is situated 20 cm. farther up; from there it again increases in breadth to 2·6 cm. At the end the thickness is 1·1 cm. and within the bend 1 cm. It is undoubtedly a child's bow and therefore not included in the table on p. 401.

Mus. No. L. 3662, from the same locality as L. 3660—61, is the end of a bow, 32·6 cm. long; it appears to have terminated in a slit, but the fragment has no longer its full breadth; it is 1·5 cm. thick at the end, 1·1 cm. at the middle and 1·4 cm, at the point where it is broken off.

The only complete bow from these regions was brought home by the NATHORST Expedition from Cape Weber[1]; judging from the illustration it closely resembled those described above.

It is probably justifiable to compare the North-east Greenland bow with the type from Southampton Island[2]; the manner in which its separate parts, if it is composed of several pieces, are joined together is also the same[3].

That the wooden bow, here as elsewhere among the Eskimo, has had a sinew backing is in itself obvious; it is confirmed by the find of implements which have been used for twisting the backing, viz. the twister and the marline spike (Fig. 18). These bone implements are well-known; MURDOCH[4] has discussed the use of the twister, and both the implements have often been described and figured[5]. They have also been found in North-east Greenland by most expeditions[6]. They will therefore be but briefly dealt with here.

L. 3807—08 and 4025—26. A set consisting of two twisters and two marline spikes (Pl. XIII, 7 and Fig. 18, *c—d*). The twisters are thin and narrow, 7·6 cm. long, and 6—8 mm. broad, with a large hole at the centre. The marline

[1] NATHORST, pp. 344—345. [2] BOAS III, p. 64, Fig. 85, *a—b*. [3] BOAS III, p. 395, Fig. 189, *b*. [4] MURDOCH II, pp. 315—16 and Plates X—XI. [5] Cf. MURDOCH I, pp. 291—294; BOAS III, p. 83; NELSON, p. 111, Fig. 30. [6] KOLDEWEY, p. 603, Fig. 16; RYDER I, p. 311, Fig. 11; STOLPE, PI. IV, 13.

spikes are quadrilateral in transverse section, 11·7 and 10 cm. long and 8—9 mm. in extreme breadth. Like the twisters, they are furnished with a large hole about 3·5 cm. from the butt end. They are probably all from Snenæs, house 406[1].

L. 3641. East shore of Stormbugt, house 319. Marline spike (Fig. 18 *e*), 12·7 cm. long and 1·6 cm. broad at the hole. Made of the side of a narwhal tusk; on one surface part of the hollow of the tusk is seen.

L. 3713. East shore of Stormbugt, in one of tents belonging to the camping ground. Twister (Fig. 18 *a*), 8·8 cm. long and 1·4 cm. broad at the middle; the hole is not placed exactly at the centre. At one edge there is trace of a drilled hole, which bears no relation to the twister as such; probably made when the material was cut out.

L. 4024. Rypefjeldet. Twister (Fig. 18 *b*). Somewhat defective at one end. 7·5 cm. long and 1·4 cm. broad. Besides the usual hole near the centre there is another at one end of the specimen.

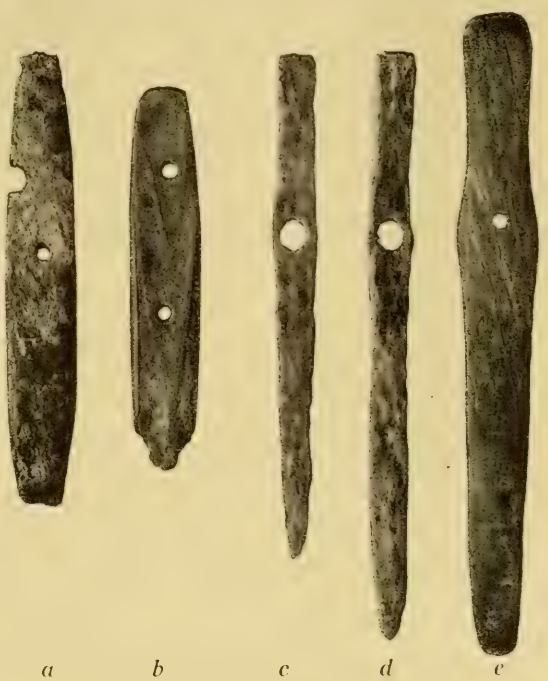


Fig. 18. $^2/_3$.

Bows of Whalebone.

In the northernmost districts of West Greenland, a bent bow of whalebone is found in addition to the bow-forms already mentioned. It is represented in the Copenhagen Museum by a few specimens only. They are made of two layers which have been lashed together in several places by mean of thin whalebone thongs passed through holes placed in pairs; the double layer does not, however, extend to the end of the bow, but only slightly beyond the bend[2]. The great elasticity of the whalebone has made a backing superfluous.

[1] The marline spikes No. 4025—26 are recorded to have been found near Rypefjeldet, but as in other respects confusion has evidently taken place as regards objects from these two finds, owing to the death of the collector, L. Mylius-Erichsen, I do not hesitate to refer these objects to the same set; they are all of them similarly weathered, and all are furnished with quite an unusually large hole.

[2] Cf. Birket-Smith II, p. 21 et seq., Fig. 3; another bow, now in Stockholm, is depicted by A. E. Nordenskiold, p. 481.

There are four end-pieces of similar bows in this collection:

L. 3439. Renskæret, house 131 (Fig. 19). To the right in the figure the knob for the bowstring is seen. The bow is bent 10 cm. from the end. For the first 8 cm. the breadth increases from 2·1 to 2·6 cm.; after that it decreases abruptly to 2·4; this narrower part of the bow is about 31 cm. long; then it increases again abruptly in breadth. The length is about 44 cm. After the bow has been discarded, the other end has intentionally been cut off square. The narrower portion has probably been strengthened by the

Fig. 19. 1/2.

application and lashing on of a piece of whalebone, but no holes are found like those in the West Greenland bows to fasten the pieces together. In course of time the bow has become badly warped.

L. 3440. From the same house as the preceding. It is now quite straight, without any curvature; one end terminates in a knob, the other is broken; length 38 cm., breadth 2—2·1 cm.; weathered.

L. 3414. Renskæret, house 130; length about 31 cm., breadth 1·6—1·8 cm.; much weathered. One end terminates in a knob, the other is broken. About 4 cm. from the unbroken end there is a notch on each side.

L. 3327. Maroussia, house 141; length 12 cm., breadth about 2·4 cm. One end terminates in a knob, the other now in a bevel.

A breadth of 1·6—2·4 cm. is very narrow for a bow. There is, however, a West Greenland bow of similar breadth, with a length of 82 cm.[3]

Several of the existing strips of whalebone of similar breadth are probably also fragments of bows. The fact that the whalebone is apt to split into lamellæ is the reason why only very little of this material is in a condition which renders it possible to form an opinion regarding its fashioning.

The specimen first described is the only one sufficiently well preserved to exhibit the original curvature of the bow.

Arrows.

In order that the section on the North-east Greenland arrowheads may be better understood, I give some prefatory notes on the form of this weapon in the rest of Greenland.

The West Greenland arrowheads of bone vary greatly in form[2]. But as a rule they have long-oval blades, of more or less considerable length, tapering to a shank approximately circular in section. When the head is cut from the solid, and not provided with a separate blade inserted in a slit at the front (which is rather uncom-

[1] BIRKET-SMITH II, p. 22, Fig. 3 *c*. [2] Cf. SOLBERG, p. 73, Fig. 54.

mon), it is furnished with one or more barbs on blade or shanks. The end of the shank tapers to a point, and is usually carved with a spiral ridge corresponding to the thread of a left-handed screw, or a portion of such. Often only the rudiments of this appear, e. g. two knobs situated at different levels.

At Smith Sound bows and arrows were not in use when JOHN ROSS in 1818 encountered the Polar Greenlanders for the first time. They were introduced into that region together with several other important features of material culture such as kayaks, salmon prongs, etc.[1], by the immigration of the Cumberland Eskimo in the beginning of the sixties of 1800;[2] but they were employed a short time only. When the American North Pole Expedition in 1872—73 wintered near Etah, none of the natives had as yet adopted this weapon[3], and in the nineties of 1800 it had already gone out of use.[4]

These bows and arrows, being introduced so late and used so short a time, are not of interest in this connection; the arrowheads have the end of the shank cut obliquely to form a splice, a fact which proves their relationship to those of the Central Eskimo.

The Smith Sound Eskimo were, however, acquainted with the bow and arrow in former times; the words are found in their language and occur in their legends[5]. During a visit to North Star Bay in 1909 an arrowhead of this older type[6] was brought to me by an Eskimo who stated that he had found it at a grave. It had, like the heads from West Greenland, a conical base with two knobs.

BOAS gives the pointed tang as characteristic of the arrowheads of the Mackenzie Eskimo and the West Eskimo in contrast to those of the Central Eskimo.[7] This western form is that found in West Greenland. A few specimens with pointed tang, however, have been found in the Central Eskimo region[8] and it is to be expected that archæological investigations will add to their number. At Angmagsalik, the use of the bow and arrow as a weapon had been abandoned at the time of the discovery of the tribe, and the form of the arrows is at present unknown.

[1] KNUD RASMUSSEN I, pp. 31 et seq.

[2] BESSELS, pp. 341 et seq. STEENSBY I, pp. 261 et seq.

[3] BESSELS, p. 360.

[4] ASTRUP, (p. 130) writes: At our arrival in 1891 hunting was still mostly carried on with bows and arrows; but at our departure in 1894 these weapons were entirely laid aside, and in the near future they will certainly only be on view in a few glass cases in the ethnographical museums.

[5] KROEBER, p. 275.

[6] Mus. No. L. 4337.

[7] BOAS I, p. 505.

[8] BOAS III, p. 83, Fig, 116 *a* and p. 397, Fig. 193 *b*; compare the doubtful specimen in BOAS I, p. 505.

a. Arrowheads with a pointed tang.

In the majority of the North-east Greenland arrowheads the same pointed form of tang is found as in West Greenland; to this type belong ten specimens from the RYDER[1] and one from the AMDRUP Expedition.[2] The latter specimen approaches the West Greenland form very closely; it is up to now the only barbed arrowhead known from North-east Greenland. The others, without barbs, have more or less slender, leaf-shaped blades and usually much shorter shanks than they have in West Greenland.

Fig. 20. $^2/_3$.

The arrowheads of this kind brought home by the Danmark Expedition are unfortunately all more or less damaged, and can thus hardly be taken as examples.

L. 4021. Rypefjeldet (Fig. 20); length 14·2 cm. The shank and the head pass evenly one into the other; the fore end is widened to admit of a slit for the reception of the blade, which lies in the plane of the greatest breadth, is made by drilling and is 1·8 cm. deep and up to 1·5 mm. broad. There is no hole for nailing the blade to the head. At the bottom of the slit for the blade the head is one cm. in diameter. The shank is so decayed that the form of the butt end cannot be seen.

L. 3806. Snenæs, house 406; length 20·4 cm. Type similar to the preceding, but not much broader at the fore end than at the tang; at the fore end, which is defective, the traces of a slit for the blade are seen. The shank is 8 mm. broad, and terminates in a point with a small knob on each side.

L. 4022. Rypefjeldet (Fig. 21 *a*). Fore end broken off; present length 8·4 cm., extreme breadth 1·5 cm. The head is triangular in transverse section and tapers gradually to a short pointed tang, which is 9 mm. broad and furnished with two half screw-threads.

L. 3558. Renskæret, house 134 (Fig. 21 *b*); length 10 cm., slender, extreme breadth of head 9 mm. and of shank 5 mm.; pointed tang with slight indications of two knobs.

L. 3727. North-west of Wendels Pynt in the neighbourhood of Danmarks Havn, tent 231; length 7·2 cm., extreme breadth of head 6 mm. and of shank 5 cm.; pointed tang without knobs.

a *b*

Fig. 21. $^2/_3$.

All the arrowheads described above have, as far as can be seen in their present condition, terminated in a pointed tang; in the two

[1] RYDER I, p. 309, Fig. 9. One of the specimens however is not smooth-sided, but made with 4 vigorous cuts.

[2] THALBITZER I, p. 366, Fig. 8 and Pl. XVI, 17. An examination of the piece itself shows that its present state is not the original one; the rear end of the tang has been pointed, but its extreme tip is broken and one side of the cone is now decayed. Cf. further in Medd. om Grønl. LIII, p. 420.

first-mentioned the leaf-shaped fore end is short and thick and has a slit for the blade, in the others it is long and slender. The two latter have undoubtedly belonged to weapons for children.

b. Arrowheads with wedge-shaped tang.

All the specimens described below are bevelled at the lower end on one or on both sides for insertion into the split fore end of the shaft; the wedge thereby formed lies in the plane of the flattened surface of the head.

L. 3052. (Pl. IX, 1). As to the form related to L. 4021 and L. 3806; length 8·3 cm. In the ellipsoid fore end a blade-slit, 8 mm. deep and 1·5 mm. broad, has been made by drilling.

L. 3053. (Pl. IX, 2). Related to L. 4022 et seq.: length 8·5 cm.

These two arrowheads, both from Snenæs, grave 423, are miniature weapons like the two preceding specimens. The four described below are weapons for use corresponding to the miniature specimen L. 3053. They are made of bone, cut from the solid, with long, leaf-shaped blades, triangular in transverse section, narrowing to a tang, which is bevelled on one or both sides in the plane of the blade; they have required a thick shaft. Close to grave 422 at Snenæs, where two of them (L. 3044 and 3045) were found, a fragment of a rather thick shaft was lying together with them; it probably belonged to one of the heads (Pl. VIII, 4—7).

L. 3041. (Pl. VIII, 4); length 19·4 cm., extreme breadth 2·3 cm. The tang bevelled on the ridged side and roughened for a distance of 3·3 cm.; breadth 1·3 cm.

L. 3044. (Pl. VIII, 5); length 23·6, extreme breadth 2·4 cm. The tang bevelled on both sides and roughened for a distance of 3·7 cm.; breadth 1·4 cm.

L. 3045. (Pl. VIII, 6); only the blade part of the head preserved; present length 20·4 cm., extreme breadth 2·4 cm.

L. 4145. The spring settlement at Rypefjeldet, tent 615. The anterior portion of the blade; present length 11 cm., breadth 2 cm.

The heads included in this group are of a type peculiar to North-east Greenland, which has no parallel on the west coast. Three specimens from the Amdrup Expedition[1] probably belong to this group, but they must all be regarded as unfinished, not even the cutting edges having been sharpened.

c. Obtuse arrowheads.

A more peculiar form of bone arrowhead, with an obtuse point and a bevelled tang, is represented by the three following specimens:

[1] Thalbitzer I, pp. 364—66; Pl. XVI, 14 and 15.

L. 3117 *b*. Thomas Thomsens Næs, near tent 48 (Fig. 22 *b*); length 8·3 cm., extreme thickness 1 cm.; straight. The anterior portion is elliptical in transverse section. Bevelled surface 3·5 cm. long.

L. 3894. "Bastionerne" (Fig. 22 *c*); length 10 cm., extreme thickness 1·1 cm.; bevelled surface 4 cm. long. Form like that of the preceding specimen.

a *b* *c*

Fig. 22. 1/2.

L. 3410. Renskæret, house 130 (Fig. 22 *a*). Made from the tip of an antler and retaining its curved form; length 9·4 cm., extreme thickness 1 cm.; bevelled surface 4·2 cm. long.

RYDER brought home four specimens of this kind[1], which he undoubtedly with justice regards as heads of bird arrows. On the other hand, judging from their form, they have hardly, as the author appears to believe, been employed singly, spliced to the shaft. Regarding the West Greenland bird arrows Hans Egede writes[2]: "The bird arrows are furnished with two or three obtuse bone pieces at their apex, so as to kill the birds only and not spoil the meat". In the West Greenland collection belonging to the National Museum in Copenhagen there is a double-pointed arrow of this kind with its shaft still preserved, but its exact origin is not known.

I am inclined to believe that the above-mentioned specimens should be regarded as arrowheads of this type.

d. Arrow shafts.

Regarding the shafts of these different kinds of arrowhead the collection gives but little information.

It has been mentioned above that in the grave find from Snenæs (grave 422), together with three large, slender arrowheads with wedge-shaped butt ends, a fragment of a shaft (L. 3048) was discovered, which judging from its position must be regarded as having belonged to one of the heads. It is, however, defective at both ends; at the fore end it is circular in section, about 1·3 cm. in diameter; towards the nock, on the other hand, it becomes elliptical in section, about 1·6 × 1·2 cm.; it terminates in a bevelled plane to which the rear part of the shaft has been spliced (Pl. VIII, 7).

The only arrowshaft (L. 3863) which may be regarded as probably complete in the essential parts comes likewise from Snenæs, but was found in the neighbourhood of houses 406 and 407 (Pl.

[1] RYDER I, p. 310, Fig. 10. [2] HANS EGEDE, p. 56.

XVIII, 8). It is 49·5 cm. long. Its weathered surface does not permit of judging with certainty that the split at the fore end was made intentionally for the insertion of the head. 10 cm. from the fore end, where at any rate it preserves its original thickness, it measures 1·8 × 1·3 cm.; from this point it becomes broader and flatter towards the butt end, terminating at the notch in a breadth of 2 cm. and a thickness of only 3 mm.

The posterior part of a similar shaft (L. 3663) was found near the houses on the east shore of Stormbugt (Pl. XVIII, 7). The fragment, which is 27 cm. long, measures at the fore end 1·5 × 1 cm. and at the nock rather more than 2 cm., the thickness being 3 mm. These are the only specimens which may be classed with certainty as arrowshafts intended for actual use. There are in addition some shafts for arrows used as playthings, viz. Fig. 42 and Pl. XXV, 24; in the case of the latter some fragments of the sinew thread with which the feathers have been attached still remain. Moreover, there are several round sticks which are probably parts of arrow shafts.

The few arrow shafts contained in the collection are strong specimens, broad at the butt end. For purposes of comparison it may be mentioned that as regards 13 West Greenland shafts preserved in our National Museum the thickness at the fore end is 0·9—1·1 cm. while the breadth at the nock in 6 of the specimens is likewise 0·9—1·1 cm. and in no case does it exceed 1·5 cm. The length is on an average less than in those already described, but varies greatly; five for instance measure between 32·2 and 35·5 cm., four others between 38·4 and 46·7 cm., while the remaining four are as much as 52, 57, 58·7 and 59 cm. long respectively. The two last shafts, long and similar in shape, belong to the same grave find; but specimens found in the same grave may very well differ considerably; thus in one find, one of the specimens measures 32·8 cm. and the other 52 cm. in length, while in another the lengths are 32·5 cm. and 38·4 cm.

It is possible that the thick arrow shafts found in North-east Greenland were intended for the large heads of type *b* — the split in the specimen figured in Pl. XVIII, 8, might be taken as an indication of this — and the more slender specimens for the smaller heads with a pointed tang; several of the small undeterminate fragments are of slender dimensions. At the present time, this question cannot be solved.

Fox Traps.

In the stone-built traps which the Eskimo set up, for the capture of foxes especially, the bottom is formed by the rocky base

upon which they are erected; the traps are thus so closely connected with the ground itself that a description of them should naturally be placed together with those of graves, houses, meat stores and other fixed stone remains. And as regards the Danmark Expedition, they are also included in Hr. CHR. BENDIX THOSTRUP'S section,[1] where mention is made of over 80 traps encountered by various members of the Expedition on their journeys.

There would thus be no reason to refer to them here, were it not for the fact that the material actually brought home included a specimen of the type: a fox-trap,[2] which Hr. THOSTRUP found set, together with 11 others, at Baadskæret, — evidently a particularly favourable spot for the capture of foxes. The traps were placed here and there between the meat depots, the smell from which would doubtless have served to attract the animals to the place.

This particular trap is described at the place quoted as follows: "Built of medium and small stones. Falling door in its place. One of the uppermost covering stones removed". The dimensions of the inner chamber are stated as: Length 0·60, breadth 0·20 and height 0·17 m. The condition in which it was found, with door closed and the upper stones in disorder, shows that the last time it was touched by a human hand must have been when the trapper lifted the covering stones to look at his catch.

The three sides of the trap are formed of 7 stones, one in the rear wall and 3 in each side wall; the space thus enclosed is roofed and weighted down with 12 other stones. In front of this chamber, a stone is placed on either hand, in continuation of the two long sides; between these two stones and the next pair a space has been left for the falling door, a more or less flat stone, which, when stood on edge, sufficed to close the trap. The foremost pair of stones are intended to hold the door in place, and prevent the captured fox from forcing it out. The bait is placed on a pointed stone set in the back wall.

When the trap is set ready for use, the falling door is held up by a thong passing lengthwise over the roof, with the bait attached to the other end. As soon as the animal has torn the meat from the stone on which it is skewered, the holding thong is released, and the entrance closed by the fall of the stone door. The fox being

[1] Especially p. 198—200, Fox traps; illustrations p. 198 and 244; hollow cairn p. 233—35.

[2] Mus. No. L. 3616. Described by THOSTRUP p. 259 under No. 279. The stones were marked on the spot before taking the trap to pieces, and the subsequent setting up in the Museum was carried out by Hr. THOSTRUP himself in accordance with the original notes.

thus taken alive, it is imperative that the stones be heavy enough to resist any attempt on the part of the victim to thrust them aside; the trap itself, also, must be erected on a floor of solid rock, to prevent burrowing out beneath the stones.

It is this type of fox trap which was formerly employed throughout the whole of Greenland, and which is still in use to some extent. In the colonised parts of West Greenland, where wood is more generally available, another type is now also used, without the falling door. In this case, a board is laid in a sloping position lengthwise through the chamber of the trap, with one end resting on the ground at the rear wall, the other being held, by a contrivance similar to that already described, on a level with the roof of the entrance. A pull at the bait releases the hold, and the board, weighted with stones, falls down upon the inmate and kills it.

Means of Conveyance.

The Sledge.

In such high latitudes the sledge is of course the principal means of conveyance; its importance can be estimated from the fact that at the corresponding degree of latitude on the west coast of Greenland, at Smith Sound, from the discovery of this tribe in 1818 to the Central Eskimo immigration in the sixties of the 19th century, it has been the only means of conveyance. Southwards it becomes of less importance as compared with the kayak, and on the west coast, the Arctic Circle forms its approximate southern limit, while on the east coast it has been used considerably more to the south, at any rate, at the place where GRAAH wintered, Nunarfik (Nunarbik), at about 63° 20′ N. lat. whence he records that the inhabitants travelled in sledges southwards to visit their relatives;[1] but it is possible that it has been employed as far as the southern limit of the country[2].

The Danmark Expedition did not find any large parts of sledges, but they nevertheless contribute some information to our knowledge of the North-east Greenland sledge.

Of objects belonging to sledges, sledge shoes are in the majority. As is common in places where iron is not easily accessible, the runners are shod with pieces of bone. About 50 specimens were discovered of which 10 came from the isolated northern find on Eskimonæsset, and 24 from the sea coast of Germania Land of which 20 are from Syttenkilometernæsset; the rest were found on the north coast of Dove Bugt.

[1] GRAAH I, p. 115; II, p. 112.

[2] In 1880 G. HOLM was informed that at 60° 30′ dog-sledges were used for ice-hunting (Medd. om Grønl., VI, 68); this is cited in English in THALBITZER II, p. 341. As regards the previous use of the dog-sledge in the districts of Julianehaab, see BIRKET SMITH I, pp. 14 et seq., published after this was written.

Several pieces of bone of this kind are required for the length of a sledge, the number varying according to the length of the bone pieces, which is very unequal. The longest specimen in the collection, for instance, measures 50·7 cm. in length; six are upwards of 30 cm. long, but the majority are much shorter, some only a few centimetres long. The longest piece of sledge shoe from North-east Greenland known to me measures 75 cm.; it is in the Christiania Museum.[1]

The breadth is considerable, most frequently 5—6 cm.; in one case, however, it was only 3·7 cm., in another 7·5 cm. The specimens found by the other expeditions in these regions are of similar dimensions. Thus those found by Ryder at Scoresby Sound vary from 4·9 to 7·7 cm. with the exception, however, of two specimens, which are only 4·3 cm. broad. For purposes of comparison it may be stated that the breadth of the shoes of the West Greenland sledges is only 2·3—3·3 cm., and that those from the Cape York District and from Angmagsalik are of like dimensions. This difference is, however, probably in most cases due only to the difference in the thickness of the material used for the runners, viz. thick planks from wrecks driven ashore in contrast to boards. On the other hand, sledges with broad runners are said to be better than those with narrow ones.[2]

In one case the thickness of a sledge shoe is as much as 2·9 cm., but usually it is far less, and in cases of much worn specimens it is reduced to a minimum.

The shoes have been fastened to the runners with wooden nails, which still remain in several of the specimens. The holes have, intentionally, been drilled not vertically, but obliquely in several directions in order to afford a better hold. The holes are usually irregularly distributed over the shoes; sometimes, however, they are fairly regularly placed, obliquely facing each other, as on Pl. XVIII, 14.[3] The main intention has evidently been not to place them opposite each other and thereby lessen the strength of the bone; the holes are, however, occasionally so placed, as may be seen in the specimen (L. 4031) described below.

On Pl. XVIII, 11—15 are shown some of the shoes found. The one (L. 3811) figured on Pl. XVIII, 14, from Snenæs, house 406, is peculiar. It has been placed at the fore end of the runner, and the point is tapering and rounded; a nail hole is drilled at the tip, and behind it there is a groove which has undoubtedly served to receive

[1] Mus. No. 13889; is now broken into several pieces. [2] Cf. Mason V, p. 547.
[3] Cf. Thalbitzer I, 436.

a thong for fastening the shoe to the runner. Length 35·3 cm., extreme breadth 6·7 cm.

There is also a similar groove on the specimen (L. 3197) figured on Pl. XVIII, 15, from Syttenkilometernæsset, the broadest and thickest shoe in the collection. It is 7·5 cm. broad, 2·9 cm. thick and 20·5 cm. long. The groove is, however, but roughly cut, and the general appearance of the object conveys the impression that it has not been used.

The longest of those (L. 3091) from Eskimonæsset is that figured on Pl. XVIII, 13; it is 50·7 cm. long and 4·9 cm. broad. In the lower end of the figure it is seen that three nails still remain fixed.

On a shoe from Rypefjeldet, Pl. XVIII, 11 (L. 4031) the holes at the middle of the piece are, contrary to custom, drilled opposite to each other, three in a row; the central hole in both rows, as also the outermost at one end, have not, however, been pierced right through. The specimen in question is 14·6 cm. long and 4·7 cm. broad.

The one from Renskæret (L. 3597), which is only 11 cm. long and 4·2 cm. broad, is cut off square at one end and separated by drilling at the other.

The material employed has for the most part consisted of hard varieties of bone, viz. whale's bone and narwhal tusk; but sometimes the natives have been obliged to put up with antler, the soft structure and irregular form of which makes it less suitable for this purpose. At least three of the specimens in the collection are of the latter material.

L. 3192 from Syttenkilometernæsset; length 13·5 cm., and extreme breadth 5·3 cm., with 6 holes.

L. 3602 from Renskæret; length 31 cm., extreme breadth 5·2 cm., with 12 holes.

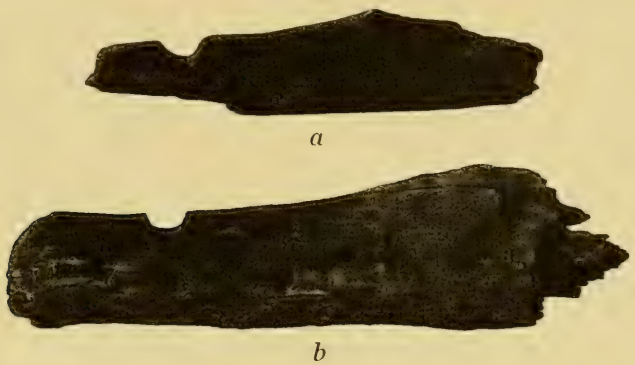
L. 3741 from Stormnæs, from near the socalled "Wolf Trap" (Ulvefælde)[1]; length 26·7 cm., extreme breadth 3·7 cm.; with 11 holes.

The shoes of antler have, in contrast to those of harder kinds of bone, retained the rounded surface of the antler on the gliding surface, as by flattening them, the softer inner tissue would be laid bare. Shoes made of antler have also been previously found in these regions.[2]

Of parts belonging to sledges the collection contains, besides the shoes, only four fragments of cross-bars, viz. Pl. XVI, 5 and 6 from Syttenkilometernæsset (76° 49′), Fig. 23 *a* from Renskæret (76° 41′), house 134 and Fig. 23 *b* from the spring settlement at Rypefjeldet

[1] THOSTRUP, p. 275, No. 378. [2] Cf. for instance KOLDEWEY, p. 601, Fig. 4.

(76° 56'), tent 634. As features peculiar to all the specimens may be mentioned a notch at the edge near the end and a chamfer running down the outer edge and terminating 5-7 cm. within the notch (see Fig. 23). This is used for the purpose of securing the lashing with which the cross-bar was fastened to the runner. As is well known, the shoes are the only parts of the sledges fastened with nails; all other parts are lashed together with thongs for the sake of elasticity. The cross-bars are secured by a thong which is carried across them in a line with the outer side of the runner, then passed through the latter to the inner side, where it again crosses the cross-bar. The notches have served to receive the outer thong and thereby guard against slipping, while the increasing



a

b

Fig. 23. 1/2.

breadth of the cross-bar prevented the inner transverse thong from working inwards towards the middle. In the specimens from Syttenkilometernæsset the breadth of cross-bars between the bottom of the notches is 5·5 cm. and 3·7 cm. respectively.

While sledge shoes have been brought home by all the expeditions, the material for the study of the wooden parts of the sledge is more scanty. In the Berlin Museum there is a complete sledge found by Koldewey's expedition near Cape Hold-with-hope (73 1/2°), in Stockholm there are a runner and some cross-bars from the Nathorst expedition and the National Museum at Copenhagen has a toy sledge brought home by Captain Amdrup from Skærgaards Halvø (68° 07')[1]. Scoresby also found a sledge runner, but I do not know where it is preserved.

In the light of the above material it is of course impossible to determine for certain the relation of the North-east Greenland sledge

[1] As regards these specimens I refer the reader to Thalbitzer I, pp. 508—511 and 388—394.

to the other Greenland types, the more so because the fragments found show certain variations as regards details. Certain main points may, however, be emphazised, so that the subject ought not to be entirely omitted.

In the inhabited part of Greenland there occur three types or, properly speaking, variations of the main type of the not built up sledge common to the larger, eastern, portion of the Eskimo domain; they differ as regards dimensions and certain structural features, but all have uprights at the back.

The West Greenland sledge, which is used south of Melville Bay down to Holsteinsborg (about 74°—66° N. lat.), is long and broad; the three sledges of this kind preserved in the National Museum in Copenhagen have a length of 2—2·10 metres with a breadth of 90—95 cm. The Polar-Greenland sledge in use among the northernmost tribe of the west coast (about 76°—79° N. lat.), is likewise long, even longer than the one just mentioned (2·27—2·64 metres, judging from the pieces measured by me), but at the same time considerably narrower, 0·54—60 m. broad. Lastly, the Angmagsalik sledge is both short and narrow; it measures 1·53—1·74 metres in length and 34—50 cm. in breadth.[1] On the other hand, the three types do not differ as regards height; all three sledges are equally high or, properly speaking, equally low; in the specimens measured the height varies between 15 and 19·5 cm.

Thus, as regards dimensions, the North-east Greenland sledge is very nearly allied to that from West Greenland; the dimensions of the Berlin sledge, 2·08 × 0·93 metres, agree closely with those of the West Greenland sledge; the Stockholm cross-bar has a corresponding breadth (about 0·95), while the runner is shorter, 1·67 metres; it is possible that it is broken at the rear end.[2]

I shall not dwell on the differences in the uprights of the different types, as this part of the sledge has not yet been found in North-east Greenland; the pieces which are now screwed on to the Berlin sledge are not uprights;[3] I should prefer to believe, that they are oblique bars like those which, in the case of the Polar-Greenland sledge, connect the runners with the cross-bar (see THALBITZER I, p. 513, Figs. 87—88); as regards form and length, they are

[1] Cf. THALBITZER II, pp. 366 et seq.

[2] Judging from the figure by THALBITZER I, p. 511 this appears probable; I myself have had no opportunity of seeing the specimen in question.

[3] W. THALBITZER (I, p. 394, footnote) writes: "In any case there is reason for supposing that the uprights, if they existed, were fastened to the inner side or the upper surface of the runners, not to the outer side." The uprights, however, always rest upon the cross-bars above the runners and are lashed to the latter.

very suitable for that purpose, and in the sledge which we are discussing, as in the Polar-Greenland sledge, the runners project well beyond the seat, and therefore furnish space for supports of this nature.[1] In the NATHORST sledge, on the other hand, the runners are less projecting.

Similar variations may be noticed as regards the fastening of the cross-bars to the runners. The specimens collected by the Danmark Expedition (Pl. XVI, 5 and 6) show that the lashing, as in both the western types, has been carried across the cross-bar along its entire breadth, while those found previously have holes through which it was carried down as in the Angmagsalik sledge; also the number and grouping of the holes differ in the different specimens.

Similar uncertainty prevails concerning the number of the holes in the runners which correspond to each cross-bar. In the majority of the specimens there appear to have been two holes for each cross-bar; in the AMDRUP sledge there is one only. But in the case of a toy, details should not be taken too seriously, and the difference is not essential in itself, dependent as it evidently is on the breadth of the cross-bar.

Judging from the scanty material we have before us, it may be stated in general terms that the North-east Greenland sledge is in the main of West Greenland type, only with some slight alterations of minor importance; it is a large and spacious travelling sledge, quite different from the small, narrow, Angmagsalik sledge. There is hardly any reason to doubt that it has had uprights; thus, I should prefer to believe that the irregularly placed penultimate holes in the AMDRUP toy sledge had served to fasten the uprights.

Of appliances for harnessing, the collection of the Danmark Expedition contains only three bone buckles used to connect the harness of each individual dog with the common trace proceeding from the sledge. They are of the usual shape, flattened pyriform (Pl. XIII, 11 and 12), and furnished with two holes, one larger, in the broad, hinder part, through which the trace proceeding from the sledge is carried, and one smaller, in the front part for the dog's trace. From this hole a groove extends on both faces down to the fore part of the buckle, and serves to receive the line and prevent it from slipping. The fact that the buckle figured in Fig. 24 differs in form at the rear end is of no importance as regards the present use of the object as a toggle, but indicates that it is made of a discarded loose shaft of a harpoon or lance.

[1] This suggestion is supported by BIRKET SMITH (I, p. 16).

The three specimens are:

L. 3809—3810 (Pl. XIII, 11 and 12) from Snenæs, house 406, 6·2 and 7·8 cm. long and 3 and 3·1 cm. broad respectively.

L. 3896 (Fig. 24) from the plain west of Hvalrosodden[1], 6·3 cm. long and 3 cm. broad.

There are in addition two miniature buckles, L. 4009—4010, from winter houses at Rypefjeldet (Pl. XXV, 22 and 23). They are only 3 and 2·1 cm. long respectively; the larger of them has, besides the usual two holes, a third hole in the fore part of the groove and one hole drilled from the fore end at right angles to this hole; the line has probably been carried through the hole in the fore end round through the two next holes and then back again, so that both the lines meet in the hole at the fore end instead of, as is usual, in front of the buckle. As far as I know, no real sledge buckle is of this construction; it is probable that these carefully made specimens have been used as ornaments.

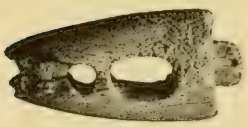


Fig. 24. 1/2.

Boats.

The methods of transport by water constitute a subject of which we have less knowledge than of any side of North-east Greenland archæology. We have a positive though not detailed statement of the fact that the Eskimo in 74 1/2° N. lat. had boats when CLAVERING visited them in 1823. In the account of how one of the sailors, to the great astonishment of the natives, shot a seal with a gun, it is said that one of them was requested to fetch the dead animal, floating on the water, in his boat.[2] To judge from the context, the boat must have been a one-man boat, consequently a kayak. However, parts of boats have not yet been found by any expedition, and, as regards accessories, a defective paddle from Cape Borlace Warren (74° 18′ N. lat.)[3] is the only object which has yet been published, unless bird-darts, winged harpoons and throwing sticks, the presence of which implies the use of the kayak, are reckoned as accessories thereto.

Consequently, as it has not hitherto been possible to form an opinion on the appearance of the North-east Greenland kayak, the small model, carved in wood (Pl. XXV, 5), found on the camping ground of Syttenkilometernæsset, is of importance. The specimen in question (L. 3243) is 11·5 cm. long and 1 cm. high in the middle. It is but 5—6 mm. thick; consequently, the model has been

[1] THOSTRUP, p. 291. [2] CLAVERING, p. 327. [3] Museum für Völkerkunde, Berlin, No. IV A 186; KOLDEWEY, p. 603; Fig. 12; compare p. 608.

intended to be viewed in profile only, and can tell us nothing of the proportionate breadth. The stern is bent upwards, but not the stem. The manhole is situated rather far back; at this point is a triangular projection; the side of it facing the stern is in its original condition, while that facing the stem is somewhat damaged. The hunter has probably been represented as sitting in the kayak, and the anterior slanting outline possibly indicates that the skin covering has been raised here and that the plane of the coaming of the manhole formed an angle with the longitudinal axis of the boat.

If a comparison should be made on the basis of this little plaything, it must be said that it recalls the sea kayak of the Aivilik[1] in its straight bows, its up-curved stern, and in the oblique coaming of the manhole, situated behind the centre ot the kayak; and it may be added, that the above-mentioned paddle from Cape Borlace Warren resembles the paddle belonging to this Aivilik kayak[2] in the outline of the blade.

In Thostrup's description of the settlements visited by the expedition, some information, derived from another source, is given concerning the boats from these regions. In seven different localities from 77° 11′ to 75° 43′ N. lat. the above expedition came across as many as 13 sets of stone posts which were interpreted as posts used for the laying up of boats.[3] Three sets, at Renskæret (Thostrup p. 238, Nos. 136—138), are designated posts for umiaks, while the others are said to have served as posts for kayaks.

The peculiarity of these posts is that they are always found in sets of three, and not, as is usual, in pairs. Thostrup is of opinion that this is due to the length and greater fragility of the boats. But the kayak-lengths indicated by some of the distances between the posts renders this view somewhat doubtful. In four cases the distances between the two outermost posts are only 3·25, 3·30, 4·20 and 4·50 metres; but in four others they are 6·10, 6·10, 6·40 and 6·75 metres. Since it is impossible to imagine that a kayak could rest safely on supports at the extreme ends — even though the addition of a third post in the centre might permit the others to be placed farther apart than in the case of two alone[4] — at least one metre, and probably more, must be added to the measurements noted above in

[1] Boas III, p. 77, Fig. 106 *b*.

[2] Loc. cit. p. 79, Fig. 107 *b*.

[3] Thostrup, p. 216 (Nos. 35, 36, 37); p, 226 (Nos. 93, 95, 96); p. 238 (Nos. 136, 137, 138); p. 257 (No. 260); p. 262 (No. 304); p. 319 (No. 655) and p. 331 (No. 721).

[4] In West Greenland, where only two posts are used, these stand fairly well inside the kayak, see for instance Steensby II, p. 141, Fig. 2. I myself have observed cases in which the length of the kayak was more than double the distance between the posts.

order to give the length of the kayak, but in this way we arrive at dimensions far greater than recorded of the Greenland kayaks. Thus, a South Greenland kayak in the National Museum in Copenhagen, measuring 6·45 metres, is considerably larger than the other kayaks preserved in the museum, these measuring from 5·02 to 5·67 metres in length, which is the average length of the Greenland kayak. In Central Eskimo regions, however, much longer kayaks are found. PARRY, for instance, records the length of a kayak on Winter Island south of the Melville Peninsula as 25 feet (about 7·60 metres)[1] and a Kinepetu kayak in New York even measures 8·60 metres;[2] consequently, there is no inherent reason why the North-east Greenland kayaks should not have been of considerable length.

On the other hand, we should hesitate to infer the presence of the umiak on the evidence of the posts at Renskæret, as long as no other is forthcoming. In one case the distance between the outer posts is not greater than that between the kayak-posts No. 93, and the breadth, 1·25 metres, does not greatly exceed the breadth of 1 metre given for the central posts of Nos. 35 and 655, which is unnecessarily great if they are intended to carry one kayak only; in the two other cases the length is greater, 7·90 and 7·10 metres, but the breadth is only 1·10 and 1·25 metres.

However we may try to interpret these stone posts, we come across features which are difficult to explain; it is therefore hardly opportune, at the present moment, to infer too much. The honour of having first drawn attention to these peculiar relics of the North-east Greenland Eskimo is due to the Danmark Expedition; the final solution of the problem which they present appears to demand the collection of further material.

[1] PARRY, p. 506. Here also two posts only were used, as is still the case on Southampton Island, cf. BOAS III, Pl. V, 2.

[2] BOAS III, p. 76.

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Tools.

Snow Knives.

Of the well-known, broad, bone knives (Pl. X, 1—2, Pl. XIX and Pl. XX, 1—2) there are in the collection nine complete specimens and two fragments.

A feature common to them all is seen in the fact that the handle forms a more or less sharp angle with the blade, and is furnished at the butt end with a knob on the same side as the concave or cutting edge. The blade is broader than the handle, more or less strongly curved, and rounded at the fore end.

But as regards the transition from handle to blade the knives are divided into two distinct groups or types. In the one, which is the more common, the blade expands abruptly on both sides of the handle; but the two "shoulders" do not stand opposite to each other, that on the cutting edge side being always somewhat anterior to that on the same side as the back, probably in order to allow more room for the fingers.[1] The "shoulder" on the back side moreover, prevents slipping, and so provides a good firm grip on the handle.

In the other group, the blade expands abruptly on the edge side only, while at the back the handle and blade merge evenly one into the other in a more or less curved line.

It should be added that, though a differentiation between "edge" and "back" is made here, there is no corresponding difference in thickness; the thickest part occurs in the middle line of the blade; the edges are rather thin, though not sharp; the one face is rounded, having more or less retained the original outer form of the bone, the other is flat.

[1] In two West-Greenland specimens in the National Museum in Copenhagen, from Umanaq (King Frederik VII's collection) and from Sermermiut at Jacobshavn (L. 1744) there are finger notches on this side of the handle.

Sometimes a hole has been drilled for the suspension of the knife. In three cases it is placed at the butt end of the handle, in two knives of Type I in the "shoulder" on the back of the knife.[1]

Type I, with double shoulder at the junction of blade and handle, is represented by six specimens:

L. 3183. Syttenkilometernæsset (Pl. XIX, 2); length 32·6 cm., extreme breadth 6·5 cm. Four holes have been drilled in the posterior portion of the back of the blade, of which now only the front one remains entire.

L. 3477. Renskæret, house 132 (Pl. XIX, 5); length 24·5 cm., extreme breadth 5·9 cm. The blade has fairly straight edges, and is very broad in proportion to its length. In the knob at the butt end of the handle a hole has been drilled for suspension.

L. 3478. From the same house as the preceding (Pl. XIX, 4); length 27·8 cm., extreme breadth 8·8 cm. In form it closely resembles the preceding specimen; it has, however, no hole at the butt end of the handle, but one at the shoulder on the back.

L. 3529. Renskæret, house 133 (Pl. XIX, 1). Unusually narrow; length 29·5 cm., extreme breadth only 3·5 cm. It is slightly curved in form; at the butt end is a hole for the reception of a thong.

L. 3652. Winter settlement on the east shore of Stormbugt (Pl. XX, 2); length 23·7 cm., extreme breadth 4·6 cm. It is made of antler, the inner tissue of which appears upon one side of the specimen, and is much weathered, which doubtless accounts for the fact that this knife, in contrast to all the others, has no knob at the butt end of the handle.

L. 4030. Winter settlement at Rypefjeldet (Pl. XIX, 3); length 29·1 cm., extreme breadth 7 cm. Like L. 3478, it has a hole at the shoulder on the back. The knob at the butt end of the handle is now missing, but two drilled holes at this point show that it has been lashed to the butt as a separate part; the point of juncture has been cut smooth and straight so as to make a neat joint. In the flat surface thus formed is a drilled cavity, the occurence of which I believe to be accidental, hardly intended to receive a tap on the opposite flat surface, a manner of joining not usual among the Eskimos.

Type I is the common form for the North-east Greenland snow knife. Besides the six specimens belonging to this collection, the National Museum in Copenhagen contains four specimens from Danmarks Ø at Scoresby Sound (70° 26′ N. lat.)[2] and one from Cape Tobin (70° 24′ N. lat.).[3] In the Christiania Museum there is one from the region of 74° 20′ N. lat.[4], and of the NATHORST collection in Stockholm three specimens of this type are figured by STOLPE[5]. Consequently, there are at least 15 specimens from the stretch of coast between 76° 49′ and 70° 24′ N. lat.

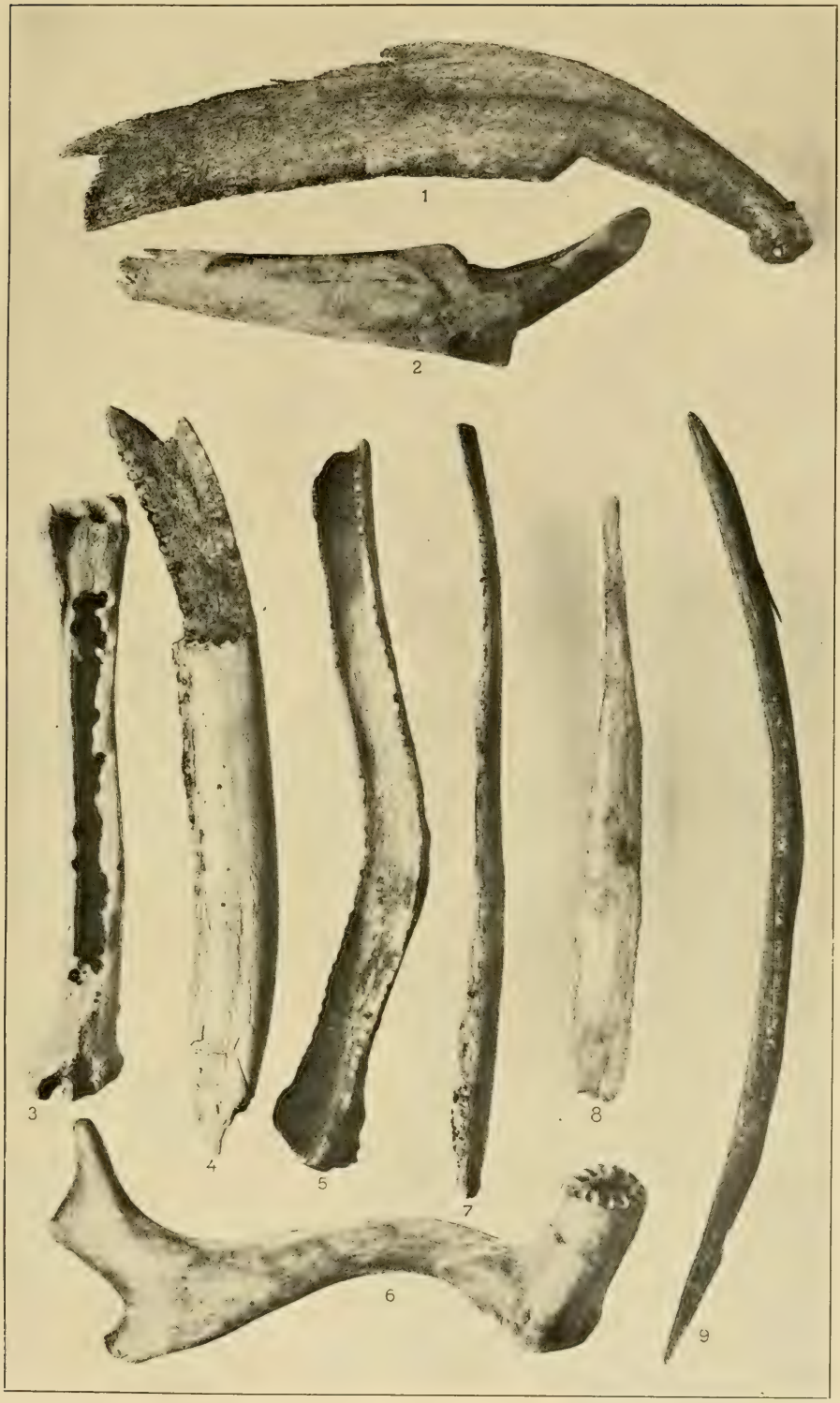
[1] A snow knife brought home by the Amdrup Expedition from Dunholm has holes in both the places mentioned above (THALBITZER I, p. 438, Fig. 42).

[2] L. b. 712, 717, 738, 740; cf. RYDER I, p. 320, Fig. 19.

[3] L. 4527; cf. footnote 1.

[4] No. 10039,

[5] STOLPE, Pl. IV, Fig. 12; the central figure in the plate.



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Type II, with regularly curved back, is far less frequently represented, in the present collection by three specimens only:

L. 3099. Eskimonæsset (Pl. X, 1). A very large and strong specimen; length 40·9 cm., extreme breadth 7·3 cm.

L. 3116. Thomas Thomsens Næs (Pl. XX, 1); length 33·4 cm., extreme breadth 6·1 cm. The tip is broken and the specimen is altogether somewhat weathered. At the knob of the handle there is a hole for suspension.

L. 3592. Renskæret, house 135 (Pl. XIX, 6); length 32·2 cm., extreme breadth 5·4 cm. The edge is almost straight, the back, which is somewhat damaged, was slightly curved.

Of this type only one is known to me besides the three specimens mentioned; it was brought home by the Nathorst Expedition and has been figured by Stolpe in the place cited in footnote 5 on p. 422.

For the sake of completeness I must here mention the two fragments in the collection, viz.:

L. 3556. Renskæret, house 134. A handle, made of antler. Its present leugth is 12·5 cm.; at the butt end it has the usual unilateral knob.

L. 3100. Eskimonæsset (Pl. X, 2). A broken blade. Present length 29·5 cm., extreme breadth 4·8 cm.

The type, which occurs more rarely in North-east Greenland (Type II) with the unilateral expansion of the blade and the regularly curved back, is also found among the Polar Greenlanders.[1] Moreover, the blade of the West Greenland snow knife has a similar unilateral shoulder, but it differs from the knife of North-east Greenland in the fact that the back is usually bent abruptly at an obtuse angle with the handle[2]. In the National Museum in Copenhagen this type is represented by 15 specimens, none of them known to have been found south of Jakobshavn (69° 13′).[3] Consequently, as was to be expected, the snow knife belongs to the Arctic regions. The ivory knife which occurs also more to the south on both coasts of Greenland, and is used for scraping ice from the kayak, was doubtlesss originally allied to the snow knife, but it has, both in Greenland and in several other places, developed into a special implement of a peculiar shape, having a narrow blade which usually shows no marked differentiation from the handle portion.

Type I, with blade expanding abruptly on both sides, has not, so far as I know, been recorded with certainty from other places in Greenland than on the north-east coast. One specimen, which in Japetus Steenstrup's collection is grouped with objects from West

[1] Bessels, p. 356; Kroeber, p. 271, Fig. 2.

[2] In a few cases, however, the back is regularly curved or even straight.

[3] Eight specimens in the late Professor Japetus Steenstrup's collection, now in the possession of Professor Johannes Steenstrup, show the same local peculiarities, one of them is of whalebone.

Greenland, has unfortunately no label attached to it.[1] On the other hand, this type is found in Central Eskimo regions; BOAS[2] figures a series of snow knives from Southampton Island and from Gore Bay, situated to the north of the latter, and also from Ponds Bay, which show an evident relationship to those from North-east Greenland. One of them, which differs, however, in having a handle with bilateral knob, has a series of holes in the posterior portion of the back of the blade, like the specimen figured in Pl. XIX, 2.[3] Another series of snow knives figured by BOAS from Iglulik and Ponds Bay[4], in which the blade and the handle are of separate pieces of ivory, illustrates the same shape, but not in so pronounced a manner; of an allied type, but likewise somewhat rounded in form, are two knives from Cumberland Sound[5]. From the latter locality, and from Southampton Island, there are, however, snow knives of other forms also[6], possibly differing in age from the preceding; in the majority of the Eskimo departments material is still lacking for chronological determination.

Men's Knives.

In North-east Greenland the man's knife was most frequently made of slate; in the present collection, for instance, there are some 10 more or less complete specimens of this material, besides several fragments (Plates VIII, 1; IX, 4; XII, 1; XIII, 14 and XXI).

They differ, however, considerably in form; sometimes the whole knife is of slate ready for use, the blade and handle being of one piece; sometimes the handle portion is quite thin, and requires reinforcing with wood or bone; others again have only a short tang, much shorter than the haft into which it had been inserted.[7]

Usually the back is straight, while the edge curves towards the

[1] It is 23·5 cm. long and 6·5 cm. broad; the fore end is abruptly rounded. It recalls Pl. XIX, 4, except that the back shoulder is somewhat rounded and there is no hole for suspension.

[2] BOAS III, p. 409, Fig. 207.

[3] The same peculiarity is also seen in the snow knife from North-east Greenland in the Christiania Museum, mentioned on p. 422. This has three holes, each of which (like one of the holes in the specimen figured by BOAS) has a groove running from it to the back of the knife. The back at this point has been smoothed so as to afford a surface to which some other object may have been lashed by means of the holes in question.

[4] BOAS III, p. 410, Fig. 208, *c*—*e* and p. 411, Fig. 209.

[5] Loc. cit. p. 42, Fig. 53, *a* and *b*.

[6] Loc. cit. p. 42, Fig. 53 *c* and p. 413, Fig. 211.

[7] A knife, of which the wooden haft or, more exactly, reinforcement of wood (attached by lashing) still remains, is figured by SOLBERG Pl. 9, 6; it belongs to the Swedish-NATHORST Expedition.

tip (Pl. XXI, 7 and 8); in some, however, the back also curves near the tip, the knife thus tapering to a gently rounded point which lies almost in the middle line of the blade (Plates VIII, 1; IX, 4 and XXI, 3); lastly, there are a few knives of divergent forms, which will be described below.

Usually the back is thick, and the blade increases in thickness from the edge towards the back, a feature most pronounced in Pl. XXI, 7 and 9; some, however, are thickest at the median line, the thickness decreasing both towards the edge and towards the back, which has then a rounded (Pl. XXI, 3), or even quite sharp (Pl. XII, 1 and XXI, 4), edge, so that the knife becomes double-edged, but evidently only the one edge has been used for cutting, the form of the implement being more or less assymetrical.

L. 3401, from Renskæret, house 130 (Pl. XXI, 1) is of a peculiar shape with highly curved cutting edge and a straight tang, 1·8 cm. long. The tip is missing, and the back is unfinished along its entire length; probably a fracture. The knife is polished only along the cutting edge and on the edge of the tang. The former is so highly curved that had it not been furnished with a tang, it would have been taken for the cutting part of a woman's knife. Length 12·7, extreme breadth 3·4 and extreme thickness 0·9 cm. Material, grey slate.

L. 3550, from Renskæret, house 134 (Pl. XXI, 5) is fragmentary, a small piece from the tip, and a portion, doubtless considerably larger, from the handle end missing. The blade narrows on both sides somewhat abruptly to the handle, the shoulder on the side of the back being deeper and about 1 cm. nearer the point than the other. The knife has been polished on both faces throughout, but not so perfectly as to eliminate all hollows on the surface; the back is rough. The present length of the knife is 8, its extreme breadth 3·6 cm. The knife is thickest (7 mm.) near the median line, where, however, there is no sharp ridge; the back is about 4 mm. thick. Material, reddish slate.

L. 3309, from Maroussia, house 140 (Pl. XXI, 7). Length 12·3, extreme breadth 2·8 cm.; thickest (9 mm.) at the back, which is polished and straight, while the cutting edge, for a distance of 4 cm., curves to the tip. The blade narrows abruptly to the very short handle portion, the shoulder on the side of the back being the deeper, and — unlike all the other specimens — also the more remote from the point; the distance between the shoulders is about 2 cm. The portion behind the back shoulder has been ground rather thin, and at the end is a hole for nailing or lashing; a part of the tang may have been broken off. Material, reddish slate.

L. 3356, from Maroussia, house 144 (Pl. XXI, 4). Present length 13 cm., but a portion, probably considerable, of the fore end is missing. Both back and edge are sharp, and the blade thickens regularly to a marked median ridge; the thickness along this line increases towards the handle, from 7 to 12 mm. Behind the cutting edge a slight shoulder has been ground for the handle, which at the butt end, on this side is furnished with a knob, similar to that on the snow knives. At the back the shoulder is as usual both deeper and nearer the point, in this case more than 3 cm. The edges of the handle are facetted, while its end is plane. The handle portion — reckoned from the base to the shoulder — is on the side of the cutting edge

6·3 cm. long, on the other side 10·5 cm. The blade is 2·6 cm. in extreme breadth, the handle at the middle 2·8, and at the end 3·4 cm. broad. Both faces have been polished throughout, some hollows, however, still remaining. At the hinder end a portion of one face has been split off. Material, reddish slate.

L. 3357. From the same house as the preceding (Pl. XXI, 10). A large and heavy knife, the blade and handle of which merge evenly one into the other. The handle is clumsy and rough, with an expansion at the butt end on the side of the cutting edge; its extreme thickness is up to 1·7 cm. The blade is thickest on the middle line, whence it gradually becomes thinner towards both edge and back; the latter, however, not so sharp as the former. The knife is polished on both faces; the handle end only is rough. Present length 21·5 cm., but the tip is now missing; extreme breadth of the blade 6 cm.; of the handle the minimum breadth is 3·5 cm., the breadth at the end 4·3 cm. Material, red slate with green spots.

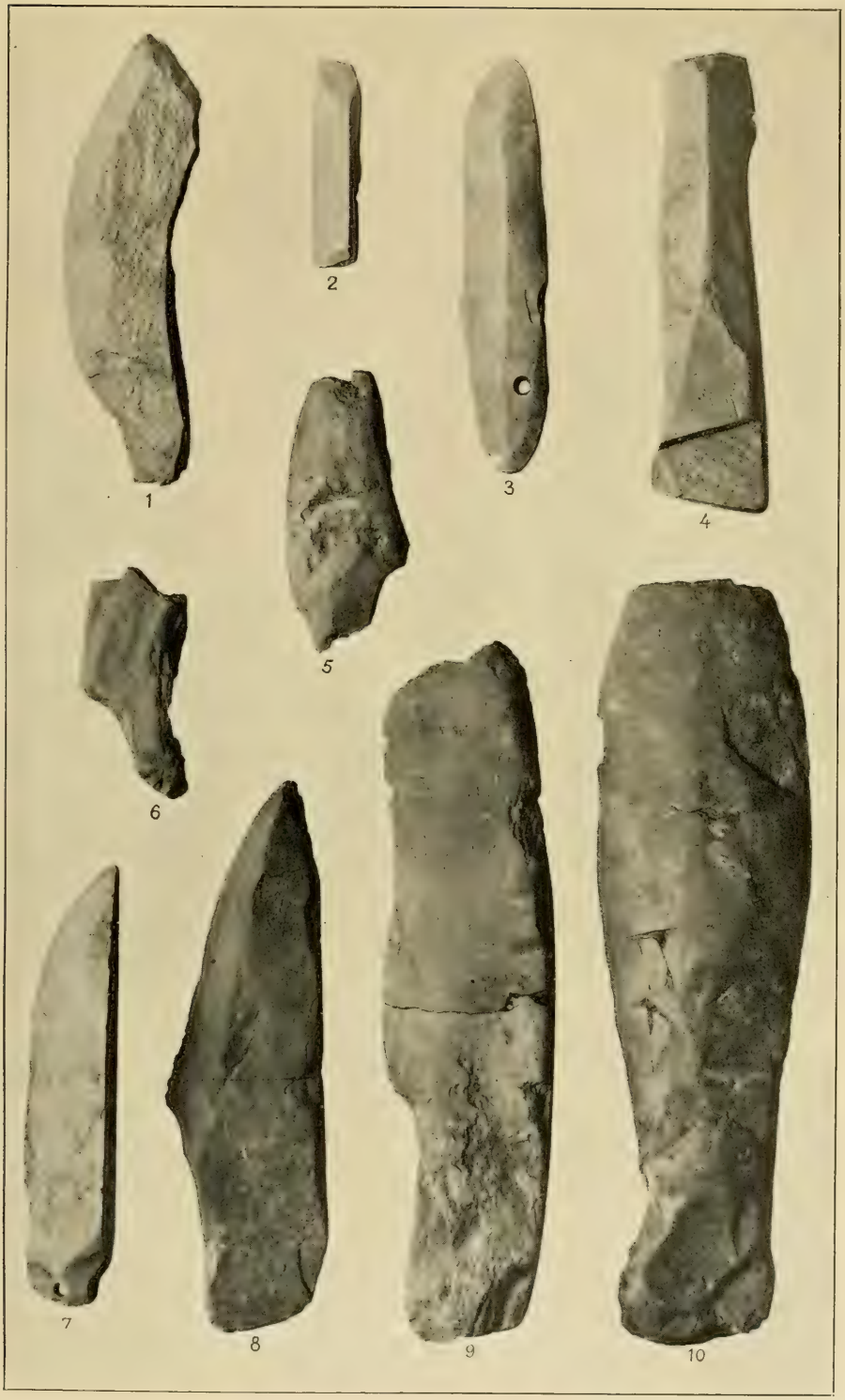
L. 3643, from the east shore of Stormbugt, house 319. Handle portion of a knife; length 3 cm. At the fore end the blade is shouldered on the side of the cutting edge. At the shoulder the breadth is 2·5 cm., while the extreme breadth of the handle portion itself is 1·9 cm, with a thickness of 5 mm. This part is barely 2 cm. long and consequently intended to be furnished with a haft. The butt end is rounded. Polished on both faces and along the edges. Material, green slate.

L. 3787, from Snenæs, house 407 (Pl. XII, 1). Blade and handle portion are not distinctly differentiated, and the knife is broadest (3·5 cm.) at the handle. The cutting edge curves slightly along its entire length; the outline of the back is at its hindermost part slightly concave, but at the tip it curves towards the cutting edge. Both edges are sharp, the blade being thickest (4 mm.) nearer to the back; the polished faces do not meet, however, in a pronounced median ridge. The handle portion is rather thicker than the blade, being 5 mm. thick, and polished fairly flat; the handle end is somewhat rounded. The specimen in question is evidently intended to be furnished with a haft. Length 12·9 cm.; material, greenish slate[1].

L. 3838, from Snenæs, house 407 (Pl. XIII, 14). The cutting edge is almost rectilinear, and slopes along its entire length towards the back; the tip, however, is missing. The handle portion contracts on the edge side, but widens again slightly towards the butt end; on the side edges and on the one face it is rough-hewn, on the other it is roughly polished; the butt end is polished off almost square. The cutting edge has been polished separately for a depth of 9 mm.; from here to the back it is of uniform thickness, 5 mm. The extreme thickness of the handle is 8 mm. Present length of the knife is 8·4 cm., extreme breadth of the blade 3·1 cm., while the handle is 2·5 cm. broad at the middle and 2·6 cm. at the butt end. Material, dark slate.

L. 3047, from Snenæs, grave 422 (Pl. VIII, 1). The blade and handle are distinctly differentiated. At the edge side the handle portion contracts behind the blade, but widens again at the butt end; at this side the handle is only 3·7 cm. long. At the back is — as in Mus. Nos. L. 3356 and 3550 — a shoulder nearer the point, viz. 6·8 cm. from the butt end, which is oblique. The knife is thickest near the back, the thickness increasing towards the handle, where it is up to 6 mm. Both edge and back curve inwards towards the point and

[1] The knife has been broken into four pieces. When received by the Museum, one of these, it is true, was found among the objects obtained from the houses 522—524 excavated by MYLIUS ERICHSEN at Rypefjeldet, but these two finds have evidently been mixed during the voyage (cf. p. 403, footnote 1).



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meet in a fairly rounded tip. Length 12·6 cm.; maximum breadth of blade 3·1 cm., minimum breadth of handle 1·9 cm., breadth at its butt end 2·1 cm. Material, red slate.

L. 3050, from Snenæs, grave 423 (Pl. IX, 4). A very slender knife. On the side of the edge 5·5 cm. from the butt end, the transition from blade to handle is faintly marked, and at the back they merge evenly one into the other. The extreme thickness occurs near the back along a ridge behind which the back portion has been thinned, and even slightly hollowed down, by grinding. The maximum thickness (8 mm.) occurs in the posterior portion of the blade, whence it diminishes gradually towards both ends; the butt end of the handle, which is rounded, is 4 mm. thick. Length 17·7 cm., extreme breadth 2 cm. Material, red slate.

L. 3916, from Rypefjeldet, house 523 (Pl. XXI, 9). A large and heavy knife. On the edge side, blade and handle are differentiated by a shoulder 7 cm. from the butt end; at the back, which is slightly curved, they merge evenly one into the other. The knife increases gradually in thickness towards the back, where, in the handle portion, it is as much as 1·4 cm. thick. Present length 19·5 cm., but the tip is missing; extreme breadth of the blade 4·9 cm.; breadth of handle 3·5—3·7 cm. Material, dark slate.

L. 3986, from one of the houses 522—524 at Rypefjeldet (Pl. XXI, 8). Broad, but comparatively thin. The outlines of the back and edge are fairly straight and converge throughout their whole length towards the point. The extreme breadth, 4·5 cm., occurs at the transition from blade to handle; thence the handle narrows to 3·1 cm. at its end. Behind the polished face of the edge itself the thickness is fairly uniform, 5—6 mm. The handle, 6·5 cm. long, thins out towards the butt end and terminates in an oblique line. Length 15·4 cm. Material, reddish slate.

L. 3987, from the same locality as the preceding (Pl. XXI, 3). Edge and back curve towards a fairly rounded point. From the median line the knife diminishes in thickness towards the edge and back, without the latter, however, becoming sharp. The shoulders, which are very slight, occur at the cutting edge 4·5, at the back 5·2 cm. from the butt end, which is rounded. Two holes have been drilled in the handle, one at the butt in front of the median line and another behind the median line 2·5 cm. from the butt. Length 11·7 cm.; extreme breadth 2·5 cm. Material, greenish slate.

L. 3988, from the same locality as the two preceding (Pl. XXI, 2). Fragment of the blade of a slender knife, similar to L. 3050. The one end is fractured, at the other (uppermost in the figure) a plane surface is seen, probably polished after a fracture. Length 6 cm., breadth 1·5. Material, light greenish slate.

L. 3970, from Rypefjeldet, house 527. Fragment of the blade of a knife; length 5·3 cm., breadth 3·5 cm.; it increases in thickness towards the back. Material, brownish slate.

L. 3948, from Rypefjeldet, house 528. Fore end of a fairly broad knife-blade; the two edges diverge rather widely. Length 5·5 cm., extreme breadth 3 cm. Material, dark grey slate.

L. 4163, from the spring settlement at Rypefjeldet, tent 624 (Pl. XXI, 6). Fragment of blade and handle of a knife. The constriction for the handle and the back edge have been very roughly hewn, and are partly damaged. Length 6·5 cm., extreme breadth 3 cm. Material dark grey slate.

Knives of this class have also been found previously in North-east Greenland, for instance, a rudely made specimen preserved in

the Christiania Museum[1] and four more finely worked knives, of better shape, brought home by the NATHORST Expedition, all of which have been figured by O. SOLBERG.[2]

It has been mentioned above that some of the slate knives have a thin handle portion which requires an outer reinforcement. A reinforcement of this class (Mus. No. L. 3444) from Renskæret, house 131, is shown in Fig. 25 *b*. The outer side of the specimen, that seen in the figure, is rounded; at the fore end are notches for lashing the blade, and at the butt end the unilateral knob as found in slate knives cut from the solid. The inner side is flat, the anterior portion has, however, been thinned out, indicating that the length of the tang of the knife, intended to be lashed on has been about 3 cm.; owing to the bad preservation of the haft this cannot, however, be stated with full certainty. The length is 15·9 cm., the breadth 1·7—1·9 cm. except at the knob on the butt end, where it is as much as 2·6 cm. broad; the thickness varies from 5 mm. (at the fore end and at the rear end in front of the knob) to 1 cm. (about 5 cm. from the fore end).

a *b*

Fig. 25. 1/2.

Fig. 25 *a* (Mus. No. L. 3575), found in the same settlement as the preceding, house 134, is a fragment of a similar reinforcement for handle, or possibly a fragment of a handle itself. While the previous specimen is rounded on the one face and flat on the other, the present one is similarly flattened on both faces, and the two hollows at the posterior knob have two corresponding hollows on the reverse side, not, however, connecting so as to form holes. Present length 8·9 cm.; it is broadest at the fragmentary fore end (2 cm.) and at the knob (1·9 cm.) and narrowest in front of the latter (1·6 cm.); the thickness is fairly uniform, about 9 mm.

SOLBERG[3] rightly draws attention to the fact that the slate knives are derived from prototypes in European culture; as regards the more well-marked forms the resemblance is so obvious that there is hardly room for doubt, especially when, in addition, the handle is furnished with a wooden reinforcement, a feature which is characteristic of the European iron knives with long broad tangs, for ex-

[1] No. 10280, figured by O. SOLBERG, Pl. 9, 3, length 17·6 cm., found in a grave at about 74° 20′ N. lat. SOLBERG is of opinion that this locality is Clavering Island.

[2] SOLBERG, Pl. 9, 3—7. [3] p. 59.

ample certain table knives. Another feature appears to me to point in the same direction. It has been pointed out above, that in the snow knives of Type I, as regards the shoulders of the blade both towards edge and back, the shoulder on the edge side always occupies a somewhat anterior position, a fact which is due to the Eskimo manner of grasping the knife with the whole hand and drawing it towards the user[1], the knuckles requiring less space than the palm of the hand, which is applied to the edge side. In some of the slate knives, also, there is shoulder not only on the edge side, but also on the back; but here the back shoulder is anterior to the other (cf. especially Pl. VIII, 1 and Pl. XXI, 4). In front of the former shoulder the back is thin, and more or less sharp[2]. I am inclined to connect this with the projection likewise known from the back of the European table knife, behind which the first finger may rest if it is required to exercise pressure, therefore in these knives the posterior portion of the back is thick, while anteriorly it becomes thinner to give elasticity. For the Eskimo, who have a different manner of grasping the knife this is of no practical importance; it appears to have been slavishly transferred from the prototype.

a *b*

Fig. 26. 2/3.

Another knife-form, which so far as I know has not previously been found in North-east Greenland, viz. with blade and handle cut from solid bone, and with a groove in the one edge of the blade for the insertion of the cutting edge, is represented in the collection by two specimens, both from house 133 on Renskæret.

L. 3535 (Fig. 26 *b*) is 18 cm. long, with a breadth of about 1 cm.; it is thin, the extreme thickness being 8 mm.; it is slightly convex on the one face and flat on the other. The side edges and the fore end are rounded, but the butt end is cut off square. On the hindermost portion, for a distance of 12·5 cm., viz. the length of the handle, the edge on the side of the cutting edge is furnished with 17 small knobs to provide

[1] Cf. Fig. in Mason IV, p. 736, Fig. 8.

[2] Knife Mus. No. L. 3309 (Pl. XXI, 7) forms an exception in so far as the projection at its back is posterior to that on the edge, but here the projection evidently serves only to fasten the knife to the handle; moreover, in this specimen the back is thick on its foremost portion and not thin, as in the specimens mentioned.

a firmer grip for the hand; at the butt end a hole has been drilled for the reception of a thong for suspending the knife. The groove for the insertion of the cutting edge is 4 cm. long, 3 mm. deep and 1 mm. broad.

L. 3530 (Fig. 26 *a*) is broken at the butt end and fragmentary; present length 12 cm. It is of far ruder workmanship than the preceding; both faces are almost flat, the side edges are cut off straight, not rounded, and the fore end also is almost straight. Towards the butt end the blade increases in thickness from 5 to 8 mm.; the handle, the greater part of which is missing, is quite irregular in form, the extreme thickness is 1·1 cm.; along the handle, on the side of the cutting edge, the two faces meet at a sharp angle, but along the blade portion this edge is cut off square to afford sufficient width for the groove in which the cutting edge may be inserted; hence the blade is 1 mm. narrower than the handle, which is 1·6 cm. broad. The groove for the cutting edge is 6 cm. long, its extreme depth is 2 mm. and extreme breadth 1·5 mm.; it is broadest and deepest in the middle.

Knives of this kind are well-known from the other coast of Greenland; JOHN ROSS saw them for instance among the Polar Greenlanders on his visit in 1818[1], here the cutting edge consisted of small iron lamellæ which, according to the natives, were taken from one of three large stones which were afterwards found, and proved to be aërolites[2].

South of Melville Bay also, these knives have been found in rather large numbers, sometimes double-edged, but more frequently single-edged, differing greatly as regards size and length of cutting edge, the latter of which, like that of the Polar-Greenland specimens, may be considerable, so that the implement resembles an European knife, or it may be quite short like that of the Greenland carving knife; the groove is sometimes continuous, sometimes it consists of a row of small incisions for the insertion of small fragments which form a cutting edge; sometimes there is a hole at the tip for nailing on a point. In the National Museum in Copenhagen there are no less than 45 specimens, of which only 12 are double-edged. Here also the cutting edge was often composed of small pieces of iron, but the latter are usually disintegrated, so that only the bone part of the knife is left.

Professor JAPETUS STEENSTRUP was the first to draw attention to these West-Greenland specimens, and pointed out that the iron, to judge from its chemical nature, could not have been of European manufacture, but was a product of the country itself, of telluric or

[1] Ross, pp. 98 and 104. [2] Cf. BÖGGILD p. 12; a fourth specimen was found a few years ago by KNUD RASMUSSEN.

meteoric origin.[1] Judging from the conditions existing north of Melville Bay he supposed it to be of meteoric origin, as was also at that time the belief concerning the detached pieces of iron found in West Greenland.

The geologist Dr. K. I. V. Steenstrup has since proved the telluric origin of the West-Greenland iron[2], and at Eqaluit in Umanaq fjord he was so fortunate as to come across a grave with a rich find comprising among other things — for instance men's knives of this kind and women's knives with similarly constructed cutting edge — the material for these edges, viz. nine small balls of telluric iron.[3]

Since the cutting edges of the knives found by excavation in West Greenland are, as mentioned above, often missing, it is of interest that there are other points which suggest their connection with telluric iron; for instance, the localities in which the latter was found and those in which the knives were discovered correspond very closely. Telluric iron has hitherto been found in the region extending from the district of Umanaq (Eqaluit about 70 1/2° N. lat.) in the north to Jakobshavn (69° 13′ N. lat.) in the south and on Disco Island further west, moreover, quite isolated far to the south at Fiskernæsset (63° 5′).[4] An investigation of the 28 knives of known origin in the National Museum shows that the 24 came from the region between Umanaq in the north and the island Grønne Eyland (68° 51′) in the south[5] and that one comes from Fiskernæsset, just the same isolated locality mentioned above where detached pieces of iron have been found. The three other knives have been found further to the north, in the district of Upernivik as far as 73° 31′ (Ivtidliarsuk). Besides the knives mentioned above, eight knives are labelled "North Greenland", precise locality not stated; on the other hand, from the whole of South Greenland there is only the knife from Fiskernæsset.

The cutting edge of the bone knives of West Greenland, in those specimens where it has been preserved, is invariably of iron. As prototype for the cutting edge formed by a series of slightly overlapping iron lamellæ Jap. Steenstrup, in the paper cited above, suggests the shark's tooth knife, the large, wooden knife with cutting edge or edges — both single and double-edged specimens occur — made of the row of teeth from the lower jaw of the shark

[1] „Fer natif ou météorique" (cf. Jap. Steenstrup, p. 244). [2] K. I. V. Steenstrup II, pp. 113 et seq. [3] Loc. cit, p. 121 and K. I. V. Steenstrup I, p. 23. [4] Bøggild, pp. 11 et seq. [5] To these may be added a knife from Hunde Eyland, which is situated at the same latitude as Grønne Eyland mentioned by Bøggild on p. 25.

inserted in a groove in one or both edges of the wood; like the iron lamellæ, the teeth in the jaw slightly overlap each other. GRAAH[1], who found a knife like these in southern East Greenland, near Malingiset (62° 20′ N. lat.), states that there it was used for cutting blubber; at Angmagsalik, from where the type is best known and where it is still prevalent at the present day, its use has become specialized, viz. for cutting the hair of certain individuals who are then also distinguished by peculiarities in their clothing; ordinarily, men wear their hair long.[2] Ritual employment of an object which was originally an article of use we may be justified in regarding as a testimony of antiquity, and these knives are also mentioned even as early as the middle of the 17th century by OLEARIUS as knives of common use.[3] By the end of the century they had probably gone out of use, since, as far I know, they are nowhere mentioned by the EGEDES, and, owing to the perishable material of which they were made, not a single specimen of them occurs in any of the numerous finds belonging to the National Museum in Copenhagen; Professor JAP. STEENSTRUP, on the other hand, in his paper just cited, has figured a fragment of such a knife found in a grave in the northernmost part of Danish West Greenland.[4]

So far as is known, knives edged with shark's teeth, like those with iron lamellæ, constitute a local Greenland type; from the Central Eskimo region, however, a similar large knife, from Southampton Island, is known; but it is edged with rounded pieces of flint fashioned by chipping and inserted in slots along the edges of the knife, which there is made of bone.[5] Whether flint-edged knives of this type existed in Greenland still remains to be proved by discovery; it is, however, not improbable that certain of the bone knives mentioned above, viz. those which instead of a continuous groove have a row of slots along the edge, like that from Southampton Island, have been edged like the latter; it must be borne in mind that the iron lamellæ are not fixed at intervals, but overlap each other as do the teeth in the jaw of the shark. PORSILD regards the small flakes of chalcedony or agate as cutting edges for knives with grooves, and figures one in which the flakes have been inserted by the direction of a Greenlander

[1] GRAAH I, p. 85, cf. Pl. VIII; II, p. 81—82. The knife found by GRAAH is also figured by W. THALBITZER II, p. 477, Fig. 187 to the right, cf. Medd. om Grønl. vol. LIII, pp. 404—06.

[2] HOLM I, p. 62; II, p. 32.

[3] OLEARIUS, p. 174: „Ihre Messer seind von Backen Zähnen eines Meerfisches, welchen sie Ekulugsua — nennen".

[4] JAP. STEENSTRUP, Pl. 25; cf. p. 248. This specimen, together with those by GRAAH and HOLM, is also figured by AD. S. JENSEN: The Selachians of Greenland, p. 16.

[5] BOAS III, p. 384, Fig. 178.

now living.[1] So long as this hypothesis has not been verified by finds I am inclined to regard it as somewhat doubtful; the only parallel known to me from the Eskimo region, figured by MURDOCH[2], he himself is inclined to regard as a counterfeit.

The flint-edged knife from Southampton Island must probably be regarded as the prototype of the peculiar Greenland form of knife with iron lamellæ. If, at its introduction into Greenland, knives of shark's teeth had already been in use, it is probable, as maintained by JAPETUS STEENSTRUP, that the overlapping of the lamellæ is an imitation of the more familiar shark-tooth edge. By this arrangement also a more continuous edge was produced, and the long groove which the old knives required was retained.

That the iron-edged knives were intended, as far as possible, to imitate European knives with iron blades is distinctly evident from several of the knife-forms: marked differentiation between a thicker handle and a thinner blade. Sometimes the blade continues in a thin tang furnished with holes for nailing a reinforcement of wood; in others, it is true, the thick handle is cut in one piece with the blade, but on the handle small knobs are carved in imitation of the nails for the reinforcement; lastly, the knife from Fiskernæsset is made in two parts, viz. a blade with a tang and a bone haft with a hollow in the fore end for inserting the tang. In all these features the European influence can hardly be denied.

SOLBERG has rightly pointed out that the double-edged knife is the original form, the single-edged being a later production. As already mentioned, the West Greenland knives with grooves for insertion of the edge occur both as double-edged and single-edged; the latter, however, are in the majority, for instance in the National Museum in Copenhagen there are 33 as against 12; it is probably significant as regards the relation in age of the two forms that so far as is known no double-edged knife has been found south of the peninsula of Nugsuak, while at least 14 single-edged knives come from districts further south, chiefly from around Disco Bay.

As regards the cutting edge of the two North-east Greenland knives figured in Fig. 26 nothing can be stated; rust does not occur in the grooves, therefore it may be that in these specimens the cutting edges have not been of iron; but even if possibly in these remote regions they were obliged to make do with another material, the connection of the knives with those described from West Greenland is nevertheless unmistakable, and to judge from the above, no very great age should be ascribed to them.

[1] PORSILD I, pp. 621—622, Fig. 7 *E*; II, p. 196, Fig. 41 *E*.

[2] MURDOCH I, p. 160, Fig. 117.

Whetstones and Grinding stones.

That whetstones should occur in great numbers among the material from the Danmark Expedition is not surprising; it is rather a matter for wonder that such should be entirely lacking in collections like AMDRUP's and that of the Germania Expedition. They are not represented in the illustrations given by STOLPE of the NATHORST finds;[1] the only whetstones from North-east Greenland known in the literature up to date are those from RYDER's Expedition, which brought back several specimens.[2]

Of the 16 whetstones from the Danmark Expedition, 13 are shown in Pl. XXII, 1—13. The five first (1—5) have a round hollow for the fingers scooped out at the ends — a peculiarity likewise found in two of RYDER's[3]. Notching midway down the narrow side to receive a bearing thong, however, such as is found in RYDER's two, is not found in any of the specimens in the present collection. Where the stone has been intended to be slung, it has hung perpendicularly, as in XXII, 2, 10, 11. No. 10 has, besides a hole at the upper left-hand corner, also a partial bore at the lower end, this latter being, apparently, the first attempt, which was relinquished, as the stone at this part would have split if it were continued. The unfinished boring of No. 11 is doubtless due to the same consideration; this specimen was, when received, split completely through lengthwise; the lower portion is lacking. In its original form it must have been not a little longer, and, with its thickness of 2·3 cm., considerably heavier than any of the others in 1—11, which vary from 6—10 cm. in length, and 0·6—1·4 in thickness, the majority being less than 0·8 thick. The breadth, which is more variable, does not in any case exceed 3·5 cm.

The whetstones shown under 1—11 have, although differing as regards the degree of careful workmanship, certain characteristics in common; all are fashioned from some kind of slate, are oblong, narrow, fairly flat, and with at least some attempt at shaping. Nos. 12 and 13, on the other hand, both fragments, are but roughly formed, almost square in section, and very little shaped. The smaller one, which has been used from several sides, measures from side to side $2{\cdot}3 \times 2{\cdot}4$ cm., the larger, measuring up to $5{\cdot}2 \times 3$ cm., has the whetting surface on one of the narrow sides. The stones of the former class would have been used for whetting the edge of slate knives; of the latter, one at least, which is of a harder stone, has doubtless been intended for rougher use, possibly for grinding down the ma-

[1] Internationaler Amerikanisten Kongres, 14. Tagung. Stuttgart 1906. [2] RYDER I, p. 332. [3] Loc. cit. Fig. 30.

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terial used in making the implements; it shows evident traces of hard wear, the grinding surface being hollowed out.

Of the specimens shown, Nos. 1—4, 6, 11 and 12 are from Rypefjeldet; 1—3, 11 and 6 (L. 3992—96) being from the houses 522—24, No. 4 (L. 3953) from house 528[1] and 12 (L. 3973) from house 527. Nos. 5 and 7, (L. 3470 and 3428) are from Renskæret, houses 132 and 131. No. 8 (L. 3840) is from the camping ground 376—91 at Stormnæs.[2] Nos. 9—10 (L. 3642 and 3647) are from the winter houses on the east shore of Stormbugt[3]; 9 was found in house 319. No. 13 (L. 3387) lastly was found at Cape Bismarck.

Axes.

The Eskimo axe is of the transverse or adze type, the direction of the edge lying at right angles to the handle. So firmly is this system adhered to, that we may find iron axe-heads of the ordinary European type, with longitudinal socket, fixed by the Eskimos at right angles to the haft.[4] In West Greenland, a carpenter's chisel is generally used to replace the original native blade.

The blade was generally of bone, with a stone edge set in a groove at the fore end, the axe thus consisting of three parts; haft, blade and edge. The blade and edge can, however, be fashioned in one piece, either of stone[5] or of bone[6].

Mention has already been made[7] of two axe-heads from Eskimonæsset (Pl. X, 10—11) of which the one (Pl. X, 11) is made entirely of bone, with no particular adaptation for attachment to the haft, beyond a slight roughening of the surface midway down the back. The other is of the type more commonly found, grooved in front for insertion of an edge, narrowed down laterally, and flattened on the underside for lashing to the haft, the blade being invariably laid directly against the end of the haft and lashed fast.

From West Greenland, we have from older times axe-heads

[1] In this house was found another whetstone (L. 3952), flat, irregular, almost triangular in shape.

[2] At the same place, under a stone at "the wolf trap" (Cf. Thostrup p. 275) was found a stone (L. 3841) quadrilateral in section, with faces clearly intended for rubbing down or grinding 7·1 × 4·9 cm., 3·6 cm. thick.

[3] From the same locality (Tent 330) is also L. 3685, 6·7 cm. long, 2 cm. broad.

[4] Cf. Murdoch I, p. 165—166, Fig. 128—129. At Point Barrow, however, pickaxes are also found, (p. 303, Fig. 304) hardly without European influence.

[5] Only among the Western Eskimos: Nelson Pl. XXXIX 3, 11, 13; Murdoch I, p. 168, Fig. 132.

[6] Murdoch I, p. 172, Fig. 142; Boas III, p. 71, Fig. 92 and p. 416, Fig. 214.

[7] Cf. pp. 372—73.

made entirely of bone, and others of bone with a stone edge. Three specimens of the latter type are preserved in the National Museum, two of them are shown by SOLBERG.[1]

In North-east Greenland, heads grooved for insertion of an edge have been found by RYDER at Scoresby Sound[2], and by AMDRUP at Dunholm[3]. The method of shaping for attachment to the haft varies; the sides may be narrowed, when the thongs would be carried round the headpiece, as in Pl. X, 10 and in the case of the specimen from Dunholm, or holes may be bored in several parts of the head, through which the lashings are passed. Where the head is broader than the haft, the holes are bored vertically through the headpiece as it lies[4]; with a narrower head, on the other hand, the holes run horizontally from one lateral edge to the other[5].

The axe-head shown by RYDER, in his Fig. 24 *c*, where the boring runs horizontally, is a little, slender piece, which can only have been used for delicate work; it measures 13·8 cm. long, 2·5—3 cm. broad and up to 1·9 cm. thick, with three holes. With this may be compared two specimens brought home by the Danmark Expedition (Pl. XVIII, 9—10). In appearance, they mostly resemble knife-handles, but have two holes pierced through for thongs, and are flattened on one of the broader sides, that lying against the haft. They are slightly rounded off in front, and have a narrow groove there, whereas the hinder end forms a flat surface, drilled off. Both were found on the camping ground on the east shore of Stormbugt.

L. 3683 (Pl. XVIII, 9) was found between tents 328—30. It is 11·5 cm. long; at the middle 2·5 × 2 cm. thick. The breadth is somewhat greater at the fore end, owing to the natural shape of the bone; the one broad side is flat, with 8 grooves as traces of its having been drilled off from the material. At the hinder end, one of the lateral edges has been narrowed by drilling for a length of 3·5 cm., the blade having evidently been too broad for the haft. As regards the holes, the foremost of these was made at one drilling, the hindmost, however, which lies close behind, is bored twice. The groove in the fore end is rectangular, 1 cm. long and deep, 3 mm. in width. The specimen was much overgrown with lichen.

L. 3712 (Pl. XVIII, 10) is from one of the tents 341—344. It is 12 cm. long, and fashioned from a piece of reindeer antler. The breadth increases towards

[1] SOLBERG Pl. 7; the third, Mus. No. L. 5651, was subsequently received. The blade of an axe, but without stone edge, from PFAFF's Collection at Stockholm Museum is shown by THALBITZER (I, Fig. 100); the two other specimens, shown as axe heads, (Fig. 101 and 102) are heads of whaling harpoons.

[2] RYDER I, p. 325. Fig. 24, *a*—*c*.

[3] THALBITZER I, p. 449.

[4] RYDER I, Fig. 24 *a*.

[5] Loc. cit., Fig. 24 *c* (Mus. No. L. c. 1481, from Cape Stewart). All three methods are likewise employed in West Greenland; two are shown in SOLBERG Pl. 7.

the hinder end, from 2·4 to 3·3 cm. according to the natural form of the horn; thickness at the middle 2·5 cm. About 2 cm. from the fore end it thins down evenly from both broad sides. At the hinder end, a layer 3 mm. thick has been removed by boring from the lower broad side for a length of 5·5 cm., for fitting on the haft. The transverse holes are both slightly oblong in section; the distance from centre to centre is about 2 cm. The hinder end is hollow as far as the foremost hole; this is however, doubtless due merely to dissolution of the inner tissue. The hole on the fore end is about 1 cm. × 6 mm. at the edge, decreasing downwards, and running to a circular termination at a depth of 2·8 cm.

Fig. 27. 1/2.

Nathorst shows a specimen, which as far as can be judged from the illustration, is of the same sort[1]. It appears to have been bored through transversely, and is, like L. 3683, narrowed at the one edge; in common with this, it has, moreover, also the flat surface with grooves, this lying, however, here about the middle of the piece. At the fore end "a chisel-like piece of iron" is preserved.

Beyond doubt also, the two specimens from the east shore of Stormbugt have had iron cutting edges; this is evident from the smallness of the groove, and in the case of L. 3712, also from its shape. Direct evidence, however, there is none, no trace of the edge remaining.

Of axe-hafts, two were found, both of wood (Figs. 27—28). They are broad at the upper end, terminating there in a flat surface to receive the head; this surface is, as is usually the case, somewhat oblique, so that the blade of the axe would form an acute angle with the haft. A little lower down on the haft a hole has been bored to take the thongs used for lashing on the head.

Fig. 28. 1/2.

L. 3502, Renskæret, house 132 (Fig. 27) 24 cm. long. The joining surface 4 × 2·3 cm. The hole about 2·5 cm. distant from the upper end; at the lower end, the haft curves in towards the edge side, terminating in a round knob.

[1] Nathorst, p. 347, Fig. *b*. The specimen itself I have not seen.

[2] Cf. *inter alia* Boas III, p. 71, Fig. 92 and p. 415, Fig. 213.

L. 3605, Renskæret, specimen found lying in the open, at the settlement 126—139 (Fig. 28), 25 cm. long, but broken off at the lower end. Joining surface is 4·5 × 3·5 cm., the hole 4 cm. from the upper end.

This type of axe-haft, with evenly curved lines and knob at the holding end, is common both in Greenland and among the Central Eskimos, as also to some extent among the Western Eskimos; here however, it is as a rule more roughly shaped, and often with a projection above behind the joining surface.[1]

Drills.

A complete set of drilling tools: mouthpiece, shaft, bits, and bow, is not found in the collection; in the following, therefore, each part will be dealt with separately.

Of the bone mouthpieces, which are held in the teeth to guide the upper end of the shaft, two specimens were found: one at Syttenkilometernæsset, and the other on the island of Maroussia.

L. 3188, (Fig. 29) was found at Syttenkilometernæsset, camping ground 73—103. Fashoned from the bone of a whale; height 3·6 cm. The shape is compressed, only 2·2 cm. thick, while the breadth of the larger, clean-cut surface amounts to 6 cm. From this the sides are rounded down in such a manner as to leave, on what is shown in the illustration as the under surface, just sufficient room for the socket intended to receive the upper end of the drill-shaft. This socket is 1·7 cm. deep. In addition to this, there is also a hollow, not so deep (9 mm.) in the upper surface. The mouthpiece shows signs of hard wear; an oblong groove, worn away by the teeth, is visible about the middle on either side.

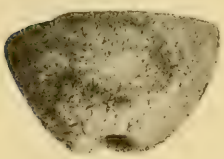

Fig. 29. 1/2.

L. 3364 (Fig. 30), found in house 144 on the island of Maroussia, is of a different shape, fashioned from a piece of narwhal's tusk, cut off straight at both ends. The socket, which is only 6 mm. deep, is here found in the broader end. Height 4·5 cm., upper surface 4 × 2·9, lower 4·2 × 3·5.

Fig. 30. 1/2.

A wooden drill-shaft was found in house 134 on Renskæret (Fig. 31). L. 3572, 11·4 cm. long, is somewhat roughly fashioned from a round stick. The narrowed portion at the upper end shows the corresponding socket of the mouthpiece used to have been 1·1 cm. deep. The greatest thickness of the shaft is at 2·2 cm. from the upper end, where the wood is 1·6 cm. thick; from here it

[1] Cf. NELSON, Pl. XXXIII *b* and XXXIX; also MURDOCH I, p. 168 et seqq.

tapers down towards the point, where it is 9 mm. The bit belonging to this drill is not preserved, but must, judging from the smallness of the socket into which it fitted, have been of iron, whereas all the bits brought home by the expedition were either of bone or stone.

The most characteristic, and best-preserved, of the bits found, is that shown in Pl. XIV, 18, (L. 3949). This specimen was found at house 528, Rypefjeldet; it is 5·9 cm. long, and made of a greyish slate. The hinder portion, for a length of 3·3 cm., forms a tang, about 1·3 cm. broad, tapering down towards the rear, so as to fit into a cleft shaft. The forepart narrows down evenly towards the point, the point itself being only about 4 mm. long, ground down from different sides, the facets meeting in an obtuse angle. The whole piece, with the exception of the lateral edges of the tang, is ground smooth; its maximal thickness is 6 mm.

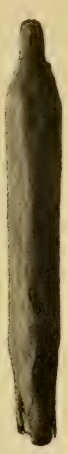

Fig. 31. 1/2.

Of the same type is the specimen shown in Pl. XIV, 19, from house 132 on Renskæret (L. 3471). This is made of slate, the outer layers of which have flaked off, until the piece is now quite thin. Length 4 cm., breadth of tang 1·5.

In the same house was found the bit Pl. XIV, 17, 5·7 cm. long, formed from the wall of a hollow bone. The tang, which is only up to 8 mm. broad, is here, as in the case of L. 3949, tapered down behind so as to fit more closely into the cleft of the shaft (L. 3492).

L. 3403 from Renskæret, house 130, of dark green slate, 3·3 cm. long, is, like the foregoing, provided with a tang for hafting, but the forepart is much shorter. A far rougher tool is the one shown in Pl. XIII, 9 from house 406 at Snenæs (L. 3794). It is fashioned of slate; only the forepart and the lateral edges are ground, the sides of the tang being left rough. Length in present state about 6·6 cm., the extreme point being broken off. Breadth up to 2·1 cm., and thickness close on 9 mm. at the part where the tang passes over into the point. The tang, however, tapers evenly down towards the hinder end, suggesting that this piece also, albeit but roughly shaped, was intended for fitting into a shaft.

In the neighbouring house, Snenæs 407, the slate bit shown in Pl. XIII, 13 was found. The point itself is short; the tang, 1·2 cm. broad, which is broken off at the hinder end, is irregularly shaped, thin at one edge and thick at the other, and does not appear to have been intended for fitting to a drill-shaft, but to be used by hand, and is thus perhaps rather an awl, or possibly a bodkin, than a drill-bit (L. 3839).

The fragmentary state of the last-mentioned specimen renders it

a matter of doubt whether it was intended for use with a shaft or not; in the case of the next, however, Pl. XIV, 20, (L. 3989), we have evidently to deal with a hand tool, both ends being here pointed, though differing in thickness. The middle portion, or grip, which is 9 mm. broad, is rather rhomboid in section; the length of the whole piece is 4·5 cm. This double-ended tool is, like the first mentioned, finely shaped; it is made of green slate, and was found in one of the houses 522—24 at the winter settlement at Rypefjeldet.

The drill, which had also to perform the functions of a saw, is one of the most important implements which the Eskimos possess, and pieces of bone which have been cut through transversely or longitudinally by this means are extremely numerous among the finds made. Pl. XX, 3—6[1] shows some characteristic instances of this: a hollow bone, laid open to the marrow by a series of drilled holes (3), a reindeer antler, from one end of which a strip has been removed by splitting and then boring transversely through (4); another reindeer antler split lengthwise (5), and one cut off by transverse boring (6).

From several of the finished tools likewise we can learn the manner of working with the drill in bone, ivory, slate and wood. In the case of slate or ivory, the drilling must be done from both sides, owing to the danger of splitting. In addition to single holes, it may also be used for cutting the slit for the insertion of the blade in harpoon heads, and for the line grooves of the same (Fig. 4) or of buckles for harness (Pl. XIII, 12). In the spliced parts of compound wooden bows, a hole is bored where the point of the splice is to reach, in order to prevent the knife from splitting the wood too far down (Pl. XVIII, 5).

Women's Knives.

The slate blade of the well-known curved-edged woman's knife, or "Ulo" is, as already pointed out by SOLBERG[2], a highly variable item, both as regards shape and size. The present collection includes specimens ranging in size from 3·4 to 15·5 cm., and from a thickness of only 2 mm. to that of the heavy blades measuring 1·6 cm. across the back.

In the thinner, more carefully fashioned knives, there is on the upper edge, or back, of the blade a sharply defined portion, generally rectangular in shape, designed to serve as a tang for the handle (Pl. XXIII, 6). In two cases (Pl. VII, 11 and XII, 16) it is rounded, and would then presumably have served as a handle in itself[3]. Con-

[1] Mus. Nos. L. 3680, 3967, 3997 and 3601 respectively. [2] SOLBERG p. 54—55.
[3] Cf. one of the knives from the NATHORST Expedition (SOLBERG p. 55, Fig. 47).

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siderable difference is also observable is various details, such as the curve of the cutting edge, and the greater or lesser divergence of the lateral edges. The blade may be furnished with holes for lashing to the handle, or may lack these, albeit this last need not necessarily indicate that the blade has been used without any handle at all.

Knives with tang or handle.

L. 3784. Snenæs, house 406 (Pl. XII, 16) 12·4 cm. long, 8 cm. high with highly curved edge and widely diverging lateral edges. The grip, which is 3·2 cm. long, is rounded on its upper part, and has possibly been held directly in the hand without any protecting handle. Maximal thickness 5 mm. Greyish-green slate.

L. 3785. Same house, (Pl. XII, 18) 12·3 cm. long, 6·8 cm. high. Lateral edges here, as in previous specimen, widely divergent, but cutting edge less curved. Tang partly broken off. About 1·5 cm. from the back are two holes for lashing to a handle. Greatest thickness 4 mm. Same greyish-green slate.

L. 3786. Same house (Pl. XII, 17). Defective. Height 4·8 cm. The tang, which is 3·7 cm. long, is somewhat rounded above; two holes, about 2 cm. from upper edge of blade show that a handle has been used. Greatest thickness 5 mm. The lateral edge preserved forms a very acute angle with the slightly curving cutting edge. At the other end the fracture has been partly ground, showing that the knife must have been in use after the portion now missing, with half of the one lashing hole, had been broken off. Same slate as the two previous specimens.

L. 3869. Snenæs, house 398 (Pl. XXIII, 4). Defective. Height 7·5 cm., greatest thickness 4 mm. The grip-tang, which in the illustration is placed somewhat obliquely, is 5·7 cm. long. No lashing holes. Ground only at the edge, the remaining surface rough, this being, however, doubtless due to flaking off. Grey slate.

L. 3523. Renskæret, house 133 (Pl. XXIII, 2). Defective. Height 6·1 cm. greatest thickness 5 mm. Divergence of lateral edges about the same as in previous specimen, but length considerably greater in proportion to height. The end preserved shows part of a tang. A hole for fastening to handle is situated near the top of the fragment; in all probability, the blade must originally have been higher. The concavity noticeable a little lower down would probably have been made later, after the original tang had been broken off. The surface is only slightly ground, except at the cutting edge and the grip, where several longitudinal scratches are visible, and also on the lateral edges. Dark grey slate.

L. 3525. Same house (Pl. XXIII, 6). A delicate little knife, made of grey slate, 3·3 cm. long, 2·5 cm. broad, and up to 2 mm. thick. Only grip and edge are much ground, especially the one side of the latter.

L. 3547. Renskæret, house 134 (Pl. XXIII, 1). Lateral edges but slightly divergent, almost parallel. Hole in middle of tang for lashing. About 1 cm. farther in, two holes have been commenced, one of them from both sides. Probably the slate broke at this stage, and was discarded; The very superficial boring nearer the edge doubtless indicated a last fruitless attempt to utilise the piece. Length and height 6·3 cm., greatest thickness 6 mm. This specimen, like the previous ones, is only partially ground. Greyish-black slate.

L. 3063. Rypefjeldet, grave deposit 530, belonging to grave 529 (Pl. VII, 11). A delicate little knife of greenish slate, edge fairly curved, and lateral edges greatly

diverging. The tang, which is thus quite small, is rounded, and has probably served as a handle in itself. Length 4·6 cm., breadth 3·3 cm., greatest thickness 3 mm.

No special grip or tang.

L. 3067. From same grave as previous specimen. Knife with wooden handle preserved (Pl. VII, 10). Edge of the blade fairly straight, the lateral edges, which fall obliquely, are roughly cut, the upper edge and surfaces, however, being fully ground. The part hidden by the handle shows smooth worn marks of friction by use. A little below this portion are two lashing holes, 3·8 cm. apart. The corresponding holes in the handle lie 5·2 cm. apart, so that the lashing thongs, which were carried in grooves to leave a level surface for the hand, would have been drawn obliquely through. The blade is 7·4 cm. long, 4·3 cm. high, and up to 9 mm. thick. The handle is cut off straight at the bottom, the upper edge, which is longer and thicker, being slightly curved. The groove for the blade is about 8 mm. wide at the mouth, decreasing in width towards its bottom, which lies 1·5 cm. deep at the middle. Greatest length of handle 8·5, height 3·3 cm., greatest thickness 2·1 cm.

L. 3950. Rypefjeldet, house 528 (Pl. XXIII, 8). Edge fairly curved, lateral edges almost at right angles to back, and are, like the latter, only very roughly cut, whereas the surfaces are ground. 8·3 cm. long, 6·9 high, and up to 6 mm. thick. Dark, reddish—grey slate.

L. 3951. Same house as foregoing (Pl. XXIII, 7). Resembles previous specimen both in shape and material. Judging from the edge, the blade must originally have been longer towards the one end, and must in such case have been reshaped after breakage, the lateral edge at this end being now straight, and parallel with the other. 5·8 cm. high, and now of same length; greatest thickness 8 mm.

L. 4116. Rypefjeldet, shelter 566. Only the cutting edge is ground, the others irregular; the specimen is possibly defective. 5·5 cm. long, 3·7 cm. high, and up to 5 mm. thick. Dark grey slate.

L. 3633. East shore of Stormbugt, house 314 (Pl. XXIII, 5). Large, thick and irregularly shaped. Both surfaces, however, are ground, and the upper part, which has been set in a handle, thinned down by hollow grinding one side; there is a hole here for the lashing. The edge fairly straight. 15·3 cm. long, 9 cm. high, and up to 1·6 mm. thick. Dark grey slate.

L. 3793. Snenæs, house 406 (Pl. XXIII, 3). High and narrow, lateral edges steep. Only the cutting edge ground, otherwise but roughly fashioned. 5·6 cm. long, 6·9 cm. high, up to 7 mm. thick. Dark bluish—grey slate.

L. 3836. Snenæs, house 407 (Pl. XII, 15). Besides the cutting edge, only parts of the surfaces are ground, where marked irregularities had to be removed. In contrast to the previous specimen, the lateral edges run sharply towards the top, giving an almost triangular shape. 9 cm. long, 7·2 cm. high, greatest thickness 1·2 cm. Same material as previous specimen.

To this series of knives should possibly be added — besides some small fragments — the doubtful specimen shown in Fig. 32, which must presumably be taken as a preliminary stage; it has not been ground at all. The specimen in question (L. 4200) which is 11·6 cm. long, 5·5 cm. high, and up to 1·4 cm. thick, is of dark bluish-grey slate, and was found in the stone-oval 496 on the western hunting-ground at Sælsøen.

Only one of the knives here mentioned had the handle still preserved.[1] Two other handles, both of wood, were found without blades.

One of these (L. 3213), from Syttenkilometernæsset, Fig. 33 *a*, is of the usual shape; upper edge thick (2 cm.) and longer than the lower, in which the groove for the blade is cut. The upper edge is 7·6 cm. long, the lower 5·5, height 3·6 cm. The groove, which is 4 mm. deep, runs the whole length of the lower edge. In the upper edge, there is a hole in the middle, and another at one end; these have, however, nothing to do with the present purpose of the piece, one of them having been cut through when the wood was severed off to be used for a knife handle.

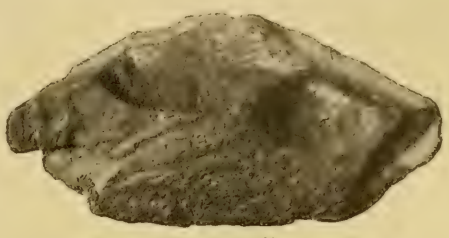


Fig. 32. 1/2.

The same type is seen again in the handles from the grave at Rypefjeldet (Pl. VII, 10) and at Cape Franklin (Solberg p. 55, Fig. 46) save that in these, there are holes for lashing the blade into the handle, whereas in the present specimen, the two parts needed no lashing to hold them together.

Fig. 33. 2/3.

The other handle piece (L. 3986) from house 527 at Rypefjeldet (Fig. 33 *b*) is of a different form. It is roughly and carelessly fashioned from a casual find, a bit of stick in places charred by fire; evidently, it can only have been intended to serve some temporary purpose in an emergency. The original shape of the stick is still in the main preserved; it is thicker at one end than at the other, and only the upper surface has been smoothed to any extent. The groove for the blade is but 3 cm. long, the length of the handle being 7·2. In each of the vertical sides two grooves have been cut to take the lashings for the blade. The height of the piece is only 1·4—1·8, and thickness 1·7—1·8 cm.

In the foregoing treatment of the Ulo are included all specimens falling under this class in regard to shape, without regard to possible differences in the use for which intended. Solberg correctly ob-

[1] Mus. No. L. 3067; cf. p. 442.

serves that the women's knives, which in West Greenland are employed for manifold purposes, in North-east Greenland exhibit a tendency to group themselves as several different implements, of varying degrees of size and fineness. There are large rough knives, such as are used in the western Eskimo region for fish knives, small slight tools which can doubtless only have been applied to needlework, and blunt-edged skinscrapers[1]. In the case of archæological material, however, where the use of an implement is only to be learned from the object itself, it will nevertheless be necessary to range such related forms together.

Scrapers.

The foregoing section was devoted to the consideration of knives classed by reason of their shape under the Ulo type, without regard to the possibility of their having been used for scraping; the following pages deal solely with implements intended as scrapers and for nothing else.

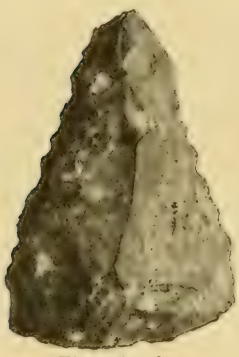


Fig. 34. 2/3.

At Rypefjeldet, on a gravel bank extending east of the eastern group of winter houses (521)[2], the scraper shown in Fig. 34 (L. 4076) was found. It is of a light brown flint, with white spots, 6·6 cm. long and 4·5 cm. broad. This is a considerable size for a scraper as Greenland scrapers go; most of those from West Greenland are far smaller, only a few reaching these dimensions. With regard to the distribution of the convex edged scraper, the reader is referred to SOLBERG's observations, which are based upon careful studies of museum material.[3] The present specimen is of particular interest from the fact of its having been found in North-east Greenland, from which region only one other example is known, and that much smaller.[4]

Another type of scraper is shown in Fig. 35 (L. 4153). This was, like the last, found at Rypefjeldet, but at the spring settlement, tent ring 619.[5] It is fashioned from part of the sheath of a musk-ox horn, one wall of which has been cut away. It is cut off straight at the upper or grip end, the lower end, or edge, being rounded. This specimen closely resembles the bone implements used by the natives at Cumberland Sound for scraping the fat from skins[6]; similar ones are also used by the Polar Green-

Fig. 35. 2/3.

[1] The last are, however, already partially separated in West Greenland, cf. PORSILD II, p. 207. [2] THOSTRUP, pp. 300 et seq. [3] Cf. SOLBERG, p. 30. [4] RYDER I, Fig. 31 *a*. [5] THOSTRUP, pp. 315 et seq. [6] BOAS III, p. 33, Fig. 40.

landers, where they serve, among other purposes, that of softening boot soles.[1]

The object shown in Pl. XXVI, 5, must doubtless also be regarded as the handle of a scraper. It was found in house 132 on Renskæret, and is formed from the radius bone of a bear. Midway down one edge a groove is cut, 11·5 cm. long, about 1 cm. wide, and over 2 cm. deep, evidently intended for the insertion of a stone blade. The handle itself is 24·5 cm. long, thus leaving room for the hands on either side of the blade. This implement, with stone blade, is used by the Chukchees[2] and the Eskimos of Bristol Bay, Alaska.[3]

I myself know of no nearer locality where two-handed scrapers with inserted blade have been found. Gudmund Hatt, in his instructive work on the fur clothing of the Arctic, in some observations on the two-handed scraper in general, states that it is found in Northern Eurasia, from Lapland to Bering Straits, and among many tribes of Indians in North America, but is altogether unknown among the Eskimos[4]; this last remark, however, can hardly be correct. The implement used by the Eskimo on the west coast of Hudson Bay for cleaning the inner side of skins, and fashioned from the split leg bone of the caribou, must doubtless be regarded as a two-handed scraper.[5] And implements more or less similar have previously been brought home from North-east Greenland, without precise statement as to locality.[6] The scrapers shown by Nelson (Pl. L, 14 and 16), from the Eskimo of Bering Strait, should, by their form, apparently also have been intended for use with both hands[7], as also Mason's specimen from the Eskimo of Mission, Alaska.[8] Among the Point Barrow Eskimo, on the other hand, the two-handed scraper is, according to Murdoch, unknown.[9]

From the whole west coast of Greenland, however, which was discovered far earlier and has been far better investigated, we have in our museum not one specimen of this implement, and from the east coast itself the item from Renskæret is the first of this kind, the locality of which is stated with any certainty.

[1] Steensby III, p. 336, Fig. 26. [2] Bogoras, Fig. 144 *a*. [3] Mason III, Pl. LXXXVIII, 2. [4] Hatt, p. 24. [5] Boas III, p. 91, Fig. 132. [6] From the Amdrup Exped. two specimens, but only the one entire; from Ryder's Exped. 1 spec. [7] Nelson, p. 118, cf. p. 116. [8] Mason III, Pl. LXXXIV, 3. [9] Murdoch I, p. 298.

Household Utensils.

Of lamps, the collection contains two perfectly preserved specimens (Pl. XXIV, 1—2) of uniform shape, heavy, broad, with rounded fore edge and evenly curved in section, with no sharp edges. Pl. XXIV, 1 (L. 3765), from house 406 at Snenæs, is 24·5 × 15·5 cm. The other, larger specimen (L. 3646), from the winter houses on the east shore of Stormbugt, measures 30 × 20.

The same proportion between breadth and length, about 2 : 3, is seen in a lamp found by the NATHORST Expedition;[1] a similar, still clumsier form is also found in a specimen preserved in the Christiania Museum, from a settlement in a fjord about 74° 20′.[2] The specimen from the RYDER Expedition, on the other hand, which was found farther south, at Scoresby Sound, is of a more slender type, 43 × 21 cm., with no rim at the fore edge. The broad, rounded form which distinguishes lamps XXIV, 1—2 is found again in one brought home by HAYES from Smith Sound,[3] and the same type, although in a lower and flatter form, is still in use among the tribe,[4] though another sort, slender and sharper edged, is now more common.[5]

I do not propose, however, here to make any attempt at tracing connection with other regions on the basis of different lamp types; this would doubtless prove misleading. The shape of a lamp is without doubt largely dependent upon the material available, and the tools with which it is fashioned. To PORSILD belongs the honour of having, in his studies on the material culture of the Eskimo in West Greenland,[6] taken the technical features as the foundation of his investigations; this is evidently a factor which should not be overlooked, yet which hitherto has frequently been neglected. A thorough study of the technical methods now in vogue among the Eskimos of Greenland in different spheres of work is a gratifying

[1] STOLPE, Pl. III, Fig. 10. [2] Mus. No. 10040. [3] HOUGH, Pl. 5, 2. [4] A lamp in the National Museum (L. 4237), brought home in 1909, measures 57 × 35 cm. [5] HOUGH, Pl. 6, 2. A specimen of this type in the National Museum (L. 4238) measures 50 × 23·5 cm. [6] PORSILD II.

task for a scientist residing in the country, and able to confirm the correctness of his observations to a far greater degree than one making but a short stay. On the other hand, it must be borne in mind that there are certain features to be considered besides the technical side; most implements acquire more or less the peculiar stamp of locality as preserved among the tribe, and exhibit, apart from individual peculiarities, a certain style of their own. And when the author in places appears altogether to deny the existence of particular forms, this is doubtless beyond the mark. Even in the case of an item so greatly varying in form as the lamp, it seems to me too strong an expression when he says, referring to the 14 types shown by Walter Hough in Pl. 24 of the previously mentioned work: "There is, however, in these typical forms, not a single one, with the exception of the form from St.-Lawrence, which might not just as well be from West Greenland".[1]

In West Greenland, and on the southern East Coast the lamp is set on the tripod, with a heavy plate hollowed to receive the blubber which oozes out.[2] Among the Polar Greenlanders at Smith Sound, on the other hand, no tripod is used, the lamp being placed instead on three smaller stones, between which a piece of skin is laid out to take the droppings. In North-east Greenland, as far as my knowledge goes, only one such drip-bowl for a lamp has been found, viz; that brought by Ryder from Scoresby Sound; it is a flat, hollowed block as those from Angmagsalik, but roughly worked, and not intended for placing on a tripod.[3]

[1] Loc. cit., p. 219. The forms as those shown under Nos. 1, 12 and 13 in the Pl. mentioned could hardly, in my opinion, occur in Greenland. It is not unnatural for one studying the implements of a single locality in particular to acquire a marked keenness of perception for such differences as there occur, whereas one having to deal with an extensive material from different regions will be more inclined to note the common features which link up separate items to a type. Here the museum investigator has an advantage over one constrained to make his comparisons through the medium of literature. On glancing for instance at the five Ulos (2—6) shown by Porsild after Holm, it must be admitted that the student would, if without further guidance, be somewhat at a loss; Holm's text, however, indicates 4—6 as the typical specimens, 2 and 3 being separate items. With regard to the former of these two, it is expressly stated that this has been imported from the West, and it is doubtless owing to the fact that only the Danish text of the work had then been published, that the specimen in question came to be included in Mason's collection of types under East Greenland.

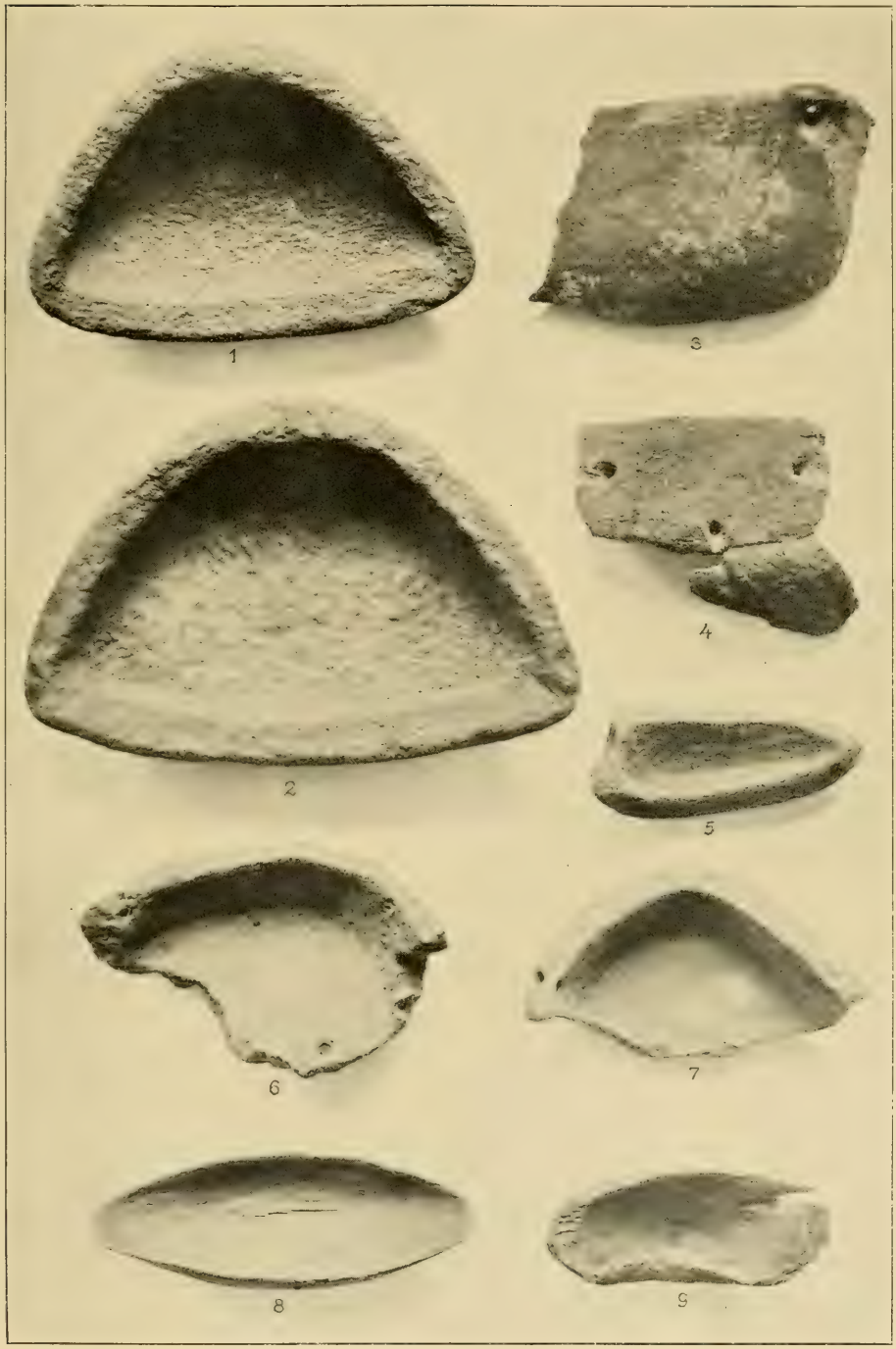
[2] Cf. e. g. Thalbitzer II, p. 534, Fig. 260.

[3] Ryder's statement (Ryder I, p. 327) that the lamp bowl stood on legs is founded on the finding of 6—7 items supposed to be legs of a lamp stand. This may possibly be the case, but the items in question might equally well have been legs of hunting stools; the dropping bowl itself has no sockets bored for the insertion of legs.

The wooden bowl shown in Pl. XXIV, 9 (L. 3635) should, I am inclined to believe, be regarded as one of these drip-bowls for a lamp. It was found among the houses on the east shore of Stormbugt. It is roughly made, hollowed out from a block, with thick walls, and somewhat charred on the underside. It will be noticed that the one side is convex, the other concave. The bottom is not flat; the bowl must, if I am not mistaken, have been supported by the stones on which the lamp was placed. The dimensions are, length 15·5 cm., breadth 5·5 and depth about 3 cm. The rough workmanship here employed is in marked contrast to that of other vessels and boxes etc., used in the house. A specimen corresponding at least in shape to this was found by the NATHORST Expedition.[1]

The lamps were found in a good state of preservation. This is not the case with the cooking vessels, which were all broken; from the fragments brought home, not a single complete vessel could be reconstructed. Pl. XXIV, 3—7 show some of the more characteristic shards, from which it will be seen that the vessels were more or less rounded, without sharp edges, either at the corners or between sides and bottom. XXIV, 3, from Eskimonæsset, has at the corner of the outer side a neatly formed projection, through which the hole for the cord was bored; another fragment, belonging to the same vessel as the piece shown in XXIV, 4, from Snenæs, house 406, has a similar projection on the inner side of the corner. The fragments XXIV, 3—4 indicate the original height of the vessels, 12 and 10·5 cm. respectively. It is otherwise with the fragments XXIV, 6, from Maroussia, house 144, and XXIV, 7, found by the meat-stores on the same island. Both these pieces are, it is true, pierced for hanging; the holes here seen, however, are, we may doubtless suppose, not the original ones, but were bored after the pot had suffered damage, and had been converted into a shallower one by grinding off the broken upper part. The inner depth of the vessel as it now stands is only 4—4·5 cm.; the holes are roughly bored, and the edge is but indifferently rounded. The general scarcity of material, necessitating constant economy with these stone vessels, is evident from most of the fragments. In Pl. XXIV, 4, it will be noticed that the two parts of the fragment preserved have been fastened together through holes near the edges, between which a groove is cut to sink the binding. Similar holes may also be seen in XXIV, 5, and in a bottom piece of reddish sandstone, not shown, from the east shore of Stormbugt.

[1] STOLPE, Pl. III, Fig. 10, right-hand bottom corner.



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From the same locality we have the fragment XXIV, 5, which has been ground off at the edges to serve some further use[1].

Bowls and other vessels of various sizes have also been used for storing provisions, or as receptacles for small objects which might be damaged if left lying about. This last was evidently the purpose for which the finer type of vessel shown in Fig. 36 (L. 4015) was intended. It is small, measuring at the rim 10·2 × 6·1, height 3·3 cm., and neatly carved from one piece of walrus tusk. It was found in a house at Rypefjeldet[2]. A specimen of exactly the same sort is preserved in our National Museum, where it forms part of a collection consisting mainly of finds from West Greenland, its precise locality of origin is, however, not known.

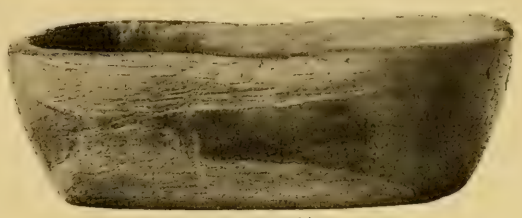

Fig. 36. $^2/_3$.

Another bowl carefully cut from a solid block, this time of wood, L. 3824 (Pl. XXIV, 8), was found in house 406 at Snenæs, mentioned in the foregoing (pp. 373 et seqq.). Its shape is approximately that of a boat, almost pointed at the ends, 21 cm. long, 7·5 broad and 3·5 high; the walls are quite thin. We have in this case definite information as to the purpose for which the article was intended; it contained, when found, 14 weapon-points of slate. The grave find at Cape Franklin includes a similar vessel put to a like use.[3]

In the same house at Snenæs were found the remains of another wooden bowl, similar in shape, but larger, thicker, and less finely worked (L. 3825). The bottom must have been at least 18 × 11 cm., but the sides slope sharply outward, the rim of the bowl at its end extending 10·5 cm. beyond the bottom, so that the original length would have been about 39 cm. Bowls of hollowed wood are represented in previous finds from North-east Greenland by a specimen of entirely similar form, albeit somewhat heavier at the ends, from

[1] Fragments of cooking vessels have been found at the following places; Eskimonæsset, several fragments of two vessels at least, viz. L. 3108 (XXIV, 3) and 3109; Maroussia, two fragments from different places, viz. L. 3355 (XXIV, 6) and L. 3376 (XXIV, 7); Renskæret, corner of a vessel from house 130, L. 3406; East shore of Stormbugt two pieces, viz. L. 3629 (XXIV, 5) and L. 3682, and Snenæs in house 406 a few fragments probably of one vessel, L. 3766 (XXIV, 4).

[2] One of the houses 522—24. In these houses Mylius-Erichsen made a nice find of bone articles, closely related to those found in Snenæs, house 406. On the decease of the finder, all further information as to this interesting find was unfortunately lost. [3] Nathorst, p. 364; Stolpe, Pl. VI, Fig. 19.

a place about 74° 20′ N. lat.[1] From Cape Tobin also we have a roughly fashioned wooden bowl, of larger size, and of rather rectangular outline.[2]

Another type of vessel commonly found in Greenland consists of an oval wooden bottom, round which a broad belt of the same or other material is bent to shape, and the ends joined, forming a tub-like receptacle with perpendicular sides. At Angmagsalik, the sides are now mostly fashioned from thin slips of wood; formerly in West Greenland, whalebone was commonly used, and occasionally, when available, birch-bark.

The Danmark Expedition found several of the bottoms of such vessels, but in no case were the sides preserved. It may therefore be supposed that they were not built with wooden sides, but the more perishable whalebone used, as it is known to have been from earlier finds in North-east Greenland.[3]

The size varies greatly; At Snenæs, house 406 and Rypefjeldet, houses 522—24, bottoms were found measuring 29 cm. by 18·5 and 16·5 respectively.[4] In the stone-built deposit belonging to grave 529 at Rypefjeldet lay a bottom piece (L. 3080) 18·5 cm. long, the remains of the vessel in which the articles deposited had been placed. The bottoms of some quite small boxes were picked up in house 398 at Snenæs (L. 3872, 7·7 × 4 cm.), in house 131 on Renskæret (L. 3466, 6·8 cm. long) and in house 141 on Maroussia (L. 3329, 5·5 × 3·6 cm.). Of a rounder form is the somewhat larger bottom-piece from house 132 on Renskæret (L. 3498, 10·3 × 8·7 cm.). A similar difference in size is noticeable in the bottoms of such boxes found by RYDER at Scoresby Sound.[5]

These two types of vessel are, as far as I am aware, the only ones which have been found in the untouched region of North-east Greenland; the coopered vessels built up with staves are first met with so far south as at Skærgaards Halvø, Scoresby Sound.[6] The square wooden box, with nailed sides, found by the Germania Expedition on Jackson Island,[7] should doubtless also be regarded as a product of southern influence. It resembles exactly the little chests used by the men at Angmagsalik for smalls odds and ends,[8] and is the only one hitherto found in North-east Greenland.

The hollowed wooden spoons and ladles, as found by several expeditions[9], are not represented in the "Danmark" collection.

[1] Christiania Museum, No. 10290, 25·2 × 12·7 cm., 4·5—5·5 cm. high. [2] THALBITZER I, p. 455, Fig. 51. [3] At Skærgaards Halvø (THALBITZER I, Figs. 26 and 28). [4] L. 3825 and 4055. [5] RYDER I, p. 334. [6] THALBITZER I, Figs. 25 and 27. [7] KOLDEWEY, p. 649. [8] THALBITZER II, Figs. 288—289. [9] RYDER I, Fig. 28; STOLPE, Pl. III, Fig. 10.

The only item in the collection illustrative of the Eskimo method of obtaining fire by drilling, is that shown in Fig. 37, from house 134 on Renskæret. It is a narrow, irregular stick of wood, cut off at both ends, and formed the bottom of a fire set. On the upper side are three hollows, on the lower side one, all bored with the fire drill.

Fig. 37. $^1/_2$.

Requisites for sewing and dressing.

Most of the small articles used for needlework have been occasionally discussed in the foregoing, and references will therefore here suffice.

The Ulo, for instance, is perhaps the most important item in a woman's workbox, but as it is also used for various other kinds of household work besides sewing, a special chapter was here required (p. 440 et seqq.). As a matter of fact, several of the women's knives included in the collection are not adapted to needlework at all, whereas others, such as those shown in Pl. VII, 11 and XXIII, 6 are so small and slight that they could only have been intended for this finer work.

Fig. 38. 1/2.

As a cutting board, for finer skin work, the little wooden board, L. 3823, from Snenæs (Pl. XIII, 10) has probably been used (cf. p. 378).

The only needlecase in the collection, L. 3079, 9·7 cm. long, is mentioned on pp. 365—66 (Pl. VII, 9) among the articles from grave 529 at Rypefjeldet in connection with related forms from other Eskimo regions. It is worthy of note, both as regards workmanship and size.

Both cutting board and needlecase have their nearest parallels in the northern part of West Greenland.

In the same grave at Rypefjeldet was also found the boot-creaser, 10 cm. long, L. 3075 (Pl. VII, 1), which is ornamented with grooves at the top, and has been fitted with a ring by which it could be hung, or carried in a sling. In reference to this article, it has already been suggested (pp. 366—67) that it might possibly, with other items from the same find, have been intended to hang as a trinket from the woman's belt.

To this class of implement should doubtless also be reckoned the unfinished article (L. 3920) shown in Fig. 38, from house 523 at

Rypefjeldet. It is made of reindeer horn, 13·2 cm. long; the lower end is rounded and thinned down to an edge; at the upper, boring has been commenced from both sides. It has not been smoothed at all.

Bodkins are represented in the collection by several specimens, including four[1] from the grave at Rypefjeldet above referred to (Pl. VII, 2—5). These were from 7—9 cm. long, all more or less coarse, but carefully made. Similar to these in workmanship and size is the specimen shown in Pl. XI, 16, (L. 3813) from house 406 at Snenæs (cf. p. 378). More sharply pointed is a bodkin from house 527, Rypefjeldet, (L. 3976) shown in the accompanying Fig. 39; it is 8·7 cm. long, and shaped with an almost conical head. The sharpest of all is that shown in Pl. XIII, 8, from Snenæs house 406, (L. 3814). Its present length is 8·6 cm., but the upper end is broken off.

Fig. 39. 2/3.

The grave at Rypefjeldet contained, together with the bodkins, a much shorter tool, (Pl. VII, 6) only 3·1 cm. long, and pierced with an eye (L. 3076). This was presumably intended as a needle for drawing thread through the holes previously pierced with the bodkin.

The comb shown in Fig. 40 was found in house 133 at Renskæret. It is 6·8 cm. high, and 3·9 cm. across, thick at the top (7 mm) diminishing evenly from there downwards, the points of the teeth being quite sharp. The teeth themselves are coarse, square-edged and set at wide interwals. Marks of the tools used in cutting the spaces may be seen far up the back of the comb.

Fig. 40. 2/3.

In shape, with the triple-curved upper edge, it resembles several of the combs from Angmagsalik[2], but the comb from North-east Greenland is of coarser workmanship, fashioned as it is with more primitive tools, whereas the thin, close-set teeth of the Angmagsalik combs are produced with the aid of iron implements: fine knives and the saw.

Combs are of extremely rare occurrence in finds from North-east Greenland. In addition to this specimen, the Danmark Expedition found, in house 144 on Maroussia, part of the side of a comb like this, with one end tooth remaining. The piece (L. 3365) is 5·3 cm. long, and quite narrow. Save for this, the only other specimen hitherto brought home by any expedition is the beautiful and remarkable comb from Dunholm.[3]

[1] L. 3073—74 and 3077—78. [2] Cf. Thalbitzer II, Figs. 331 and 333 *a*. [3] Thalbitzer I, Figs. 55—56.

The rarity of this article is doubtless partly due to the difficulty of cutting out the teeth with stone implements; an entirely parallel instance is afforded by the earlier stone age in Denmark, from which, up to the present, only eight specimens, and these from but three different localities, have been found. In Danish antique combs we find, as in many of those from Greenland, marked furrows running up from the intervals between the teeth, either perpendicularly or obliquely, as also, on the one side, transverse furrows at the upper end of the teeth. When the surface of the comb has been polished, they appear as marks of wear, and have given rise to conjectures regarding the use of the article for combing bast fibres or other material for thread-making.[1] In the case of the present specimen, the surface of which is only slightly polished, we notice, on the side turned upwards in the figure, marked perpendicular furrows running up from three of the spaces, and two others running downward on either side of the middle hole. There is also a network of fine scratches running crosswise. On the opposite face, the marked longitudinal furrows are not apparent, but there are numerous fine scratches running lengthwise, and especially across, over the entire surface, from the back to the extreme point of the teeth.

These grooves and scratches may doubtless all be explained as due to the process of making. The marked perpendicular furrows are presumably caused by the slipping of the knife on leaving the groove between the teeth; the fine scratches by the treatment of the surface. The thinning down of the material would have been done mainly from one side, the reverse of that shown, which explains the disappearance here of the longitudinal furrows proceeding from the intervals between the teeth; the scratches still remaining on this side represent the bottom of the deep cross-cuts made in the original surface to facilitate the work of scraping away. I am inclined to think that this explanation may in all essentials also be applied to the Danish stone age combs.

Besides the above mentioned marks, the comb from Renskæret shows at the back four short cuts on either surface, each of those on one face closely corresponding to one of the four on the other. These cuts were possibly made as guides to ensure accuracy in the boring of the holes, which was done from both sides.

The comb is one of those articles in which the individual taste makes itself most markedly apparent; the comb from Dunholm is

[1] JAPETUS STEENSTRUP: Stenalderens Tvedeling, p. 366 note. SOPHUS MÜLLER: Ordning af Danmarks Oldsager, Stenalderen No. 44; C. NEERGAARD in „Affaldsdynger fra Stenalderen i Danmark", p. 66 f.

quite unlike that from Renskæret. In Angmagsalik it has, it is true, settled down into a definite type of simple form; in West Greenland on the other hand, we encounter marked individual differences, and the same applies more or less to the other Eskimo regions.[1]

[1] Cf. Murdoch I, p. 150, Nelson, p. 57, Boas III, pp. 107 and 417. It is most markedly seen in Greely's find made at Lake Hazen (Greely, vol. I, p. 406).

Clothing and Ornaments, Toys and Games.

The only real article of clothing hitherto known from North-east Greenland is a part of a boot (L. 3348) found in house 142 on Maroussia. It is made of sealskin, with the hair turned outwards. A portion of the sandal which curves up round the foot is preserved, showing the gathering and sewing at the juncture between sandal and upper. The specimen is, however, so crushed and defective, that no further details are distinguishable.

Ornaments are more numerously represented. A type of ornament not previously known, and evidently intended to be worn round the neck, is the round plate of mica, bored at one edge for a sling, of which two specimens (Pl. XXV, 20—21) were found at the settlement at Rypefjeldet, one (L. 3999) in one of the winter houses 522—24 (Pl. XXV, 20) and the other (L. 4078) in tent 549. The latter, which measures 3·8 × 4·6 cm., has the cord, of twisted sinew thread, preserved; it lay rolled up along the edge of the ornament itself; the other, measuring 4 × 4·4 cm., lacks the cord.

Other neck ornaments have already been mentioned under the heading of grave finds, as for instance the seven black, low cylindrical stone beads (L. 3064) from grave 529 at Rypefjeldet (Pl. VII, 8, cf. p. 364) as also the eight pierced teeth of fox (L. 3066) found together with two pendants (Pl. VII, 13—15) in grave 321 on the east shore of Stormbugt (p. 361—62). Of the drop ornaments, the one (L. 3058) is of bone, 2 cm. long, slender and rounded, narrowed at the waist and with a raised belt above (Pl. VII, 14), the other (L. 3059) is of black stone, 1·8 cm. long, nearly circular in outline, flat at the back and convex in front (Pl. VII, 15). These ornaments, the stone drop in particular, would seem to have been intended for the ear.

Similar articles of ornament were found in house 406 at Snenæs, (p. 374) to wit, one bored animal tooth (Pl. XI, 11) and eight long cylindrical bone beads, 1·1 to 1·5 cm. long (Pl. XI, 10) as also some drops of stone or bone. One of these stone drops (L. 3760) is of the

same shape, with flat back, and the same colour as the one above described; it is 2 cm. high, (Pl. XI, 13); the other, (L. 3761) which is 2·1 cm. high, is conical in shape, with convex base, fashioned from a handsome kind of spotted stone (Pl. XI, 14). This drop has been worn so long that the original hole was nearly worn through, and another has therefore been pierced lower down. Of the bone drop ornaments, the one (L. 3754) is broad pear-shaped, 1·1 cm. high and 1·2 cm. broad (Pl. XI, 8) another, (L. 3755) which is 1·4 cm. long, is slender (Pl. XI, 9), resembling somewhat in shape that shown in Pl. VII, 14.

In house 134 at Renskæret was found a small, almost heart-shaped bone pendant (L. 3560), only 1·5 cm. high, the ring of which is now broken through (Pl. XXV, 13). Similarly small in size, 1·4 cm., but in shape more resembling Pl. XI, 9, is the bone drop shown in Pl. XXV, 12, from one of the winter houses 522—24 at Rypefjeldet. It has lost its ring; the split noticeable at the bottom is hardly intentional, but rather due to the material. From the same find, we have a pear-shaped drop 1·4 cm. long (L. 4006), which may or may not originally have had a ring; also two large bone drops (Pl. XXV, 10—11) 3·4 and 3·3 cm. high, both rough and unpolished (L. 4004 and 4003). From house 406 at Snenæs there is also a small drop ornament 2 cm. high (L. 3753), shaped like a leg or a boot (Pl. XI, 12).

All the drop ornaments hitherto described, whether of stone or bone, have one feature in common; the hole bored for the string is run transversely through at the upper end of the drop, sometimes carved out into a distinct ring. It is otherwise with the bone drop shown in Pl. XI, 7, from house 406 at Snenæs (L. 3756). Here, the hole is pierced from the top obliquely through to one side under the raised collar; it would have thus have been held by a knot in one end of the string. The specimen is 1·5 cm. high.

A cylindrical bone bead, 2·9 cm. long and roughly cut (Pl. XXV, 14), ornamented with three bands (L. 4007), is from the houses at Rypefjeldet. It is perhaps doubtful whether this formed part of any personal ornament; it resembles mostly the beads used by the Eskimos of Angmagsalik for ornamentation of whip-lashes. The large diameter of the bore, 6—7 mm., would also seem to point in this direction.

The two bone plates with peculiar ornamentation, shown in Pl. XI, 1 (L. 3805 from Snenæs) and Pl. XXV, 19 (L. 4016 from Rypefjeldet) have been dealt with in the foregoing. A similar specimen from a grave find[1] indicates these as belonging to the class

[1] Nathorst, p. 364.

of women's ornaments. The decorative pattern is also found in hair ornaments from Southampton Island, which they resemble in several respects; certain features, however, especially the hole through the middle, which is found in all of them, render it doubtful whether they should be compared with these ornaments, which have not hitherto been found in Greenland.

The specimen shown in Pl. VII, 7, (L. 3072) has in the foregoing (p. 367) been mentioned as probably forming the fastening of a woman's belt. It is a flat piece of bone, 8·7 cm. long, pierced in the centre. Pl. XXV, 15 also, (L. 4012), from Rypefjeldet, has doubtless been intended to serve a similar purpose. It is 4·8 cm. long, with a hole about 3 mm. diameter in the middle, this hole being, however, expanded to a hollow of greater circumference on the convex side, presumably so as to take the knot of the thong.

The bone button Pl. XXV, 16 is apparently from the dress of a man; similar ones are used elsewhere in Greenland for the straps which serve as braces to hold up the kayak skirt; it is passed through a round plate in the upper edge of the skirt.[1] The specimen in question (L. 4011) is 2·8 cm. long; it was found, like the last-named and the next following specimen, among the houses 522—24 at Rypefjeldet.

Pl. XXV, 17 shows a piece of bone 3 cm. long, pierced transversely with two holes. The use for which it was intended cannot be determined with certainty; all that we can say is that is must have served to hold two straps together. Bone studs of this sort are known in connection with the kayak skirt, where they act as a link between the straps hanging down in front[2]; on the other hand, exactly similar pieces are also used for tightening the cross-straps of the kayak.[3] This last we may presumably take to have been the purpose of the object shown in Pl. XI, 15 (L. 3758); it is far more roughly cut, 3·2 cm. long, and with one broad side concave. It was found in house 406 at Snenæs.

Altogether indeterminable is the piece of carved bone Pl. XXV, 18 from Rypefjeldet (L. 4013). It is 4·2 cm. long, the upper side convex, the lower flat.

The pierced bears' teeth must be classed either as articles of ornament or as toys; at Angmagsalik, they are hung in bunches at the ends of a split thong, to serve as a rattle. The collection comprises three such teeth, only one of which (Fig. 41 *b*, L. 3395) is pierced right through; this specimen was found on the camping ground west of Vestre Havnenæs. The tooth shown in Fig. 41 *a* (L. 3494) from house 132, Renskæret, shows the commencement of

[1] Cf. THALBITZER II, p. 576, Fig. 299 *a*. [2] Ibid. p. 572, Fig. 296. [3] Ibid. p. 391, Fig. 95 *g—i*.

a boring on either side, but has not been fully pierced; in the third and last specimen, L. 3396, which was found together with that shown in Fig. 41 *b*, boring has been commenced from one side only.

In the description of the find at Snenæs, house 406, mention was made (p. 374—75) of some small animal figures, carved in bone, and pierced for threading on a string (Pl. XI, 2—5). Three such figures (Pl. XXV, 7—9) were also found at Rypefjeldet, probably all in house 522, where the one at least (L. 3902) lay in a little cavity at the fore edge of the bench[1]. Of the figures three from Snenæs (L. 3748—50) represent swimming birds, apparently loons. They are from 1·8 to 3·2 cm. long, and flattened at the bottom so as to stand; two of them are figured Pl. XI, 2—3. One, from Rypefjeldet, (Pl. XXV, 7) represents a sitting falcon, a bird which, as far as my knowledge goes, has not hitherto been found among carvings from Greenland. It measures 2·9 cm. from head to tip of tail (L. 4002). The remaining four (Pl. XI, 4—5 and XXV, 8—9) are seals; one (Pl. XI, 5) which is 3 cm. long, (L. 3751) is rounded, the three others (L. 3752, 3902 and 4001) measuring 2·2 to 4·5 cm., have a flat resting surface, indicating that they were intended to show the animals as lying on their backs. It is thus extremely doubtful whether these figures were designed as hanging ornaments, since, from the way in which the holes are bored, they would hang not only head downwards, but flank outwards. The question of their possible use as toys or pieces in a game has been discussed in the foregoing, under the heading quoted.

a *b*

Fig. 41. $^2/_3$.

Together with the falcon was also found a small bone bear (Pl. XXV, 6) in a standing position, with neck outstretched. Fore- and hind legs are shown, but joined in pairs, as in the fine large figure of a bear Fig. 3, p. 376. The present figure, which is 4·1 cm. long, has originally been finely polished, but is now much weather-worn; it is pierced with a large hole in the middle. Amdrup found, at Cape Tobin, a figure of a whale similarly pierced, together with several other animal figures pierced with a small hole at the hinder end, as those above described. [2]

[1] As regards the two others, (L. 4001—02) all that is known is that they were found by Mylius-Erichsen in one of the houses 522—24.

[2] Thalbitzer I, p. 478, Fig. 58.

A little toy bear, of wood, (Pl. XXV, 4) was found in house 132 at Renskæret. This figure (L. 3501) which is 6·8 cm. long, and 1·8 cm. high, is somewhat roughly carved from a flat stick, only 9 mm. thick. The legs are thus only indicated by a couple of blocks, 1·2 cm. broad, the carver apparently not daring to make them thinner, lest the wood should split, as the grain runs from head to tail of the figure. He has nevertheless succeeded, with few strokes of the tool, in giving a very natural presentment of the bear with its long neck outstretched, small ears, and slightly hanging belly-part.

The representations of the human figure in Greenland art are far inferior to those of animals. All the specimens of human figures in the present collection are of the usual conventional type, without arms, and with the face cut as a flat surface. The same applies to most of the other figures found in North-east Greenland;[1] in one or two cases, however, human figures have been found with eyes, nose and mouth indicated.[2]

In the same house with the wooden bear above described was found the wooden figure of a woman (Pl. XXV, 1) 5·9 cm. high. The hair is done up in a tall topknot pointing slantwise back, the body is nude (L. 3500). As far as I am aware, no corresponding arrangement of the hair is found on any other Greenland doll hitherto known; both in the west and at Angmagsalik, the topknot is shown standing straight up, and the upper, broader part above the tie is generally executed with particular care; the wooden dolls are mostly designed to be seen full face.[3] The woman from Renskæret has done her hair in a peculiar fashion, with no tie in the middle, but making an even cylindrical figure, rounded at the top; the arrangement as it stands resembles mostly the central Eskimo method of doing the hair as shown by BOAS.[4]

Another woman's figure, (Pl. XI, 6) carved in bone, is from the great find made at Snenæs. This specimen (L. 3747) which is 3·1 cm. high, is dressed in the wide frock in which the child is carried on the back. Owing to the shape of the material, the figure tapers more than would be natural towards the lower end. The legs are separated by a series of drilled holes.

The houses on Renskæret contained several other small wooden figures, as for instance in house 131 the naked man shown in Pl. XXV, 2 (L. 3443) 4·9 cm. high, and in house 130 the dressed figure of a man (L. 3417) shown in Pl. XXV, 3, which is only very small, 3·9 cm. high. The lower edge of the frock is indicated both in back

[1] KOLDEWEY, p. 601, Fig. 1; NATHORST, p. 364. [2] NATHORST, p. 348; RYDER I, p. 337, Fig. 37. [3] Cf. e. g. THALBITZER II, p. 645, Fig. 366. [4] BOAS I, p. 561, Fig. 515 profile drawing.

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and front of the figure. Three other figures lack the head, and being executed altogether with but little regard for detail, are difficult to determine. A small figure 2·8 cm. high in present state from house 133 (L. 3537) is apparently male, as also another now 4·7 high (L. 3563) from house 134; it would seem to be wearing the natit and boots. Altogether indeterminable is a larger figure from the same house (L. 3562); it is fashioned from a kind of wood which flakes off a great deal, so that only the lower portion of the figure is now preserved, 4·9 cm. long. Its breadth, however, 2·7 cm. shows it to have been originally far larger than the remaining dolls.

With these small figures we pass to the category of toys. As usual among the Eskimos, most of the toys are miniature models of the implements used by adults.

From the sphere of conveyance, the little trace buckles for dog harness (Pl. XXV, 22—23) have been described in the foregoing (p. 418) as also the small wooden kayak shown in Pl. XXV, 5 (p. 418—19).

Of weapons, the bow is represented by a fragment, 11·7 cm. long, from one end (Pl. XX, 25) found in shelter 565 at Rypefjeldet (L. 4113).

Fig. 42. 1/2.

At the top may be seen the horn round which the loop of the string is passed, at the other end the fork of the splicing by which this endpiece, exactly as in the real weapon, was joined to the middle, the point of the latter being set into the fork and lashed fast.

The hinder end of an arrow-shaft 12·4 cm. long (L. 3621) from tent 301 on Baadskæret is shown in Pl. XXV, 24. The part near the notch is flattened, and shows the binding of sinew thread used for holding the feathers. This binding was not preserved on any of the real arrow-shafts found. Another, complete arrow-shaft, 19·4 cm. long, (L. 3382) from Maroussia is shown in Fig. 42.

Pl. XXV, 26 shows a small throwing stick (L. 3565) from house 134 on Renskæret. It is in present state 11·8 cm. long, the hinder end lacking. The holding end is rounded, and with grooves on both sides to form a grip for the fingers; there is, however, no hole for the index finger similar to that in the specimen found by Ryder at Scoresby Sound.[1] It thus agrees with the throwing stick found by the Nathorst Expedition[2], but differs from both the former specimens in the fact that the sides run more or less evenly, whereas

[1] Ryder I, p. 318, Fig. 18 *a*. The notch shown about the middle in the figure Pl. XXV, 26 is merely due to a knob having fallen out of the wood.

[2] Stolpe, Pl. V, Fig. 17 to the right.

in the two real implements they narrow in considerably at the hinder end, while the holding part is very broad. In the case of a toy model, however, it would not be wise to trust overmuch to fidelity of detail. One feature common to both the previous specimens is the fact that the hole for the bone peg of the shaft is placed very close to the end at the holding part; the same is also indicated in the case of the throwing stick from Renskæret, as we may doubtless suppose the hollow visible in the middle line of the specimen to be the beginning of the hole intended to receive the bone peg.

Of toys having no connection with the future occupation of the child, the only specimen in the collection is the disc of a spinning top (L. 4057) from Rypefjeldet, shown in Pl. XXV, 27. It measures 7·5 × 5·2 cm., a hole for the stick is seen in the middle. A disc found by RYDER at Scoresby Sound[1] was of the same oblong form.

The widely popular game of *ajagaq*, a kind of cup and ball, or ring and pin, which is known under one form or another throughout the Eskimo region and great parts of the Indian territory,[2] is here represented by the piece of bone shown in Pl. XV, Fig. 7, (L. 3676) from tent 328 on the east shore of Stormbugt. The specimen is of extremely primitive workmanship, fashioned very roughly from the humerus of a seal. At the lower end of the bone, 7 holes have been bored, otherwise, no further shaping has been attempted, save that the tubercle has been removed.

When in use, the bone would be fastened to one end of a string, the other end of which is tied to a sharpened stick held by the player, whose aim is to throw up the bone and catch it on the point of the stick; hence the holes in the former. The present specimen is not pierced for the string, as is frequently found to be the case; in this instance, the string must have been tied round the bone.[3]

Although the main principle of the game is the same, the pieces of bone used exhibit considerable difference, even within restricted areas of West Greenland.[4] At Angmagsalik, the method is simplified; here, a hollow bone is used, often without other holes than those offered by the natural cavity.[5]

The form used in North-east Greenland is also found in four

[1] RYDER I, p. 336, Fig. 35.

[2] Cf. CULIN, pp. 527 et seq.

[3] In one of the houses 522—24 at Rypefjeldet a fragmentary humerus was found with the tubercle cut off in the same way (L. 4034). It has presumably been intended for the same purpose, but this cannot be said with certainty, as the lower end of the bone is lacking. A hole near the shoulder joint was probably designed for the string.

[4] Cf. PORSILD II, p. 228, Fig. 62.

[5] Cf. THALBITZER II, p. 656, Fig. 381 and p. 658, Fig. 387.

specimens from West Greenland, all from the more northerly part of the coast. One of these, from Sarqaq in the Waigat, presented to our museum by PORSILD, is shown in his work.[1] Outside Greenland, the same bone, used for *ajagaq*, is found among the Kinepetu and Aivilik Eskimo,[2] and even as far distant as among the Makah Indians at Neah Bay in the State of Washington.[3]

The *ajagaq* from the east shore of Stormbugt is the first specimen of the game found in North-east Greenland. It is also the only kind of game which has been found, unless we consider the little carved bone figures as forming part of a game such as the "*tingmiujang*" of the central Eskimos (cf. pp. 374—75).

[1] PORSILD II, p. 228, Fig. 62 *c* (L. 6912); of the two others, one (L. c. 1041) is from Prøven, Upernivik District, another (L. c. 828) from Pertlertut, Disco, while the third, (L. c. 451) is only located as from North Greenland.

[2] BOAS III, p. 112, Fig. 164.

[3] CULIN, p. 559.

Various Items.

In addition to the articles hitherto mentioned, the collection contains a number of objects, the purpose of which cannot be stated with certainty, or which cannot be included under any of the previous headings.

Fig. 43 shows a bone toggle found in tent 615 at Rypefjeldet (L. 4144), possibly from the lower end of a drag-line, such as is used for hauling home the carcass of a seal. It is made of narwhal's tusk, and measures 6·6 cm. in length. One end of the piece, that on the left in the figure, has been thinned down to an edge, the other being left blunt. Near the middle, an oblong slit has been cut for the line, by boring two holes close together.

Fig. 43. 1/2.

The piece of bone shown in Pl. X, 9 (L. 3089) from Eskimonæsset, is probably the handle of one of these drag-lines. It is 11·2 cm. long, somewhat broader at the middle than at the ends, so as to leave room for the hole through which the line was passed.

On the east coast of Store Koldewey Island, a piece of bone as shown in Fig. 44 was found lying on the shore (L. 3299). It is irregular in shape, the ends rounded, section roughly trilateral. The substance of the bone is now highly porous. Length 8·8 cm., thickness about 3 cm. It is pierced with two fairly large holes, not set parallel each to the other, but at an angle of about 60°. The interval between the holes is on the side shown in the figure 2·8, on the reverse 5 cm. I am unable to say to what use it could have been put.

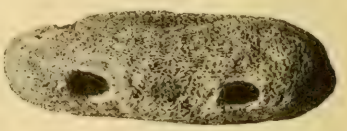


Fig. 44. 1/2.

A remarkable item is the object shown in Pl. XXII, 14, from Syttenkilometernæsset (L. 3189). It is made of narwhal's tusk, 21·8 cm.,

long, breadth at middle 1·5, increasing at the ends to 1·9 and barely 1 cm. thick. Section elliptical. The whole piece is very slightly curved. There are two holes, set close together, at either end, connected on the convex side by a groove intended to take the part of the thong passed through the holes which lies between them (14*a*); there is no corresponding groove on the opposite side. The extreme portion at either end, beyond the holes, is thinned down on the concave side, so as to form a notch (14*b*). It is probably some kind of handle.

Pl. XXVI, 1—4 shows some objects made from reindeer horn. Pl. XXVI, 1, (L. 4142) is the tip of an antler cut off at the hinder end, and but very slightly shaped; the fore end is somewhat broader, and fairly flat. The lateral edges have been evenly rounded, and meet at the fore end in a blunt point. On the fore end, the surface shows marks of the tool used for shaping. The extreme portion is worn quite smooth, the wearing continues farther down the right edge than the left, where it only runs for about 1·5 cm. The length of the piece is 27·7 cm., greatest breadth 2·8. Possibly it may have been intended as a snow-beater[1]. It was found in the meat-store 636 at the spring settlement at Rypefjeldet.

Pl. XXVI, 2 (L. 3522) is from house 132 at Renskæret. It is a slip of reindeer horn, 29·5 cm. long, which has been split off from the antler. One edge is rounded off at the fore end, so that the point lies at the opposite edge. At the hinder end, on the outer side, part of the bur is visible; on the inner side, that shown in the figure, the inner tissue of the antler has not been removed. The specimen is doubtless a preliminary stage of some implement, possibly a kayak cleaner.

Pl. XXVI, 4, (L. 3719) from a tent on the east shore of Stormbugt, is also formed from a reindeer antler. At the hinder end, the bur is preserved for its whole extent, on the right in the figure, two branches have been cut off, but a couple of small projections still remain on the site of the hinder one. The forepart of the antler has been split down to the shape of a knifeblade; the splitting off of another piece at the hinder end, on the other hand, is doubtless due to accident. The piece is 27·8 cm. long.

Fig. 45. 1/2.

The two foregoing specimens can only be regarded as in the preliminary stages of workmanship; the next two, however, Pl. XXVI, 3 and Fig. 45, both found on Renskæret, have, although shaped but to a primitive degree, been used in the state in which they now appear. They are rough

[1] Cf. Boas III, p. 407, Fig. 204, especially *c*.

slips of reindeer antler; only the forepart has been narrowed down and rounded off at the edges and the end, and neither edge nor point are sharp. Both are evidently intended for the same purpose.

Fig. 46. 1/2.

Pl. XXVI, 3 (L. 3483) from house 132, a complete specimen, is 23·9 cm. long, 2·5 cm. broad at the hinder end, the rounding off of the edges commences about 3·5—5 cm. from the point, nearer the end on the left than on the right edge. — Fig. 45 (L. 3554) from house 134, has the hinder end broken off, present length 12·5 cm., greatest breadth 2 cm.; the part rounded off for use is only a couple of cm. long.

The implement shown in Fig. 46 (L. 3206), from Syttenkilometernæsset, consists of the end of a reindeer antler, 23·5 cm. long, and broken off at the hinder end. Only a portion 3·5—4 cm. long at the fore end has been shaped, this being cut down to a wedge shape from both sides; the two surfaces meet, though not in a sharp edge.

A similar wedge-shaped pointing of the fore end is seen in the implement shown in Pl. XX, 7, (L. 3885). This specimen, found at the camping ground at Snenæs, is 34 cm. long, and is a piece split off from a long bone. The wedge-shaped sharpening of the one end is all that has been done to it.

A piece of bone found at the same place is shown in Pl. XX, 8, (L. 3884); it has been split off in a similar way, and from marks at the hinder end it is evident that the bone has been cut through by means of the drill. The length is 26·8 cm., breadth of a rear half 2·5—2·8. From the middle or thereabouts, the bone is narrowed down from either side to a breadth of only 1 cm.; the extreme end has been thinned down with a few irregular strokes.

Fig. 47 shows a carefully fashioned and smoothly polished little tool (L. 3323) from house 141 on Maroussia. It is made of narwhal's tusk, 7·2 cm. long, round, but slightly flattened. The upper end is convex, the thickness, which is here 0·9—1·2 cm., decreases gradually to 5 mm., after which the extreme end runs down abruptly to a short conical point, in which a small hole has been driven, scarcely 2 mm. deep and thus hardly suited for the insertion of a drill-bit. A similar article, (L. 6631) was brought home by AMDRUP from

Fig. 47. 2/3.

1/2

North-east Greenland. It is somewhat heavier, and fashioned of reindeer antler, otherwise corresponding in shape and size. The lower end terminates in a surface some 4 mm. in extent, at the centre of which a similar slight depression is noticeable, the depth in this case being even less, not quite 1 mm.

Fig. 48. 1/2.

The little tool made of reindeer horn (L. 3486) shown in Fig. 48, was found in house 132 on Renskæret. It is a piece from the tip of the antler, 8·4 cm. long. At the broad end it has been cut off straight, and here a hole has been made, about 1 cm. long, greatest breadth 0·5 cm. and about 1 cm. deep, apparently intended for the insertion of a knife-blade or other instrument. At the thinner end, the antler has been flattened somewhat on both sides, and at the tip itself there is a fine hole as in Fig. 47, but slightly oblong, and about 3 mm. deep.

Fig. 49. 1/2.

The piece of bone shown in Fig. 49 (L. 4098) was found in tent 552 at Rypefjeldet. It is 12 cm. long, the end turned downwards in the figure still shows distinct marks of the drill with which it was cut off. The left side has been shaped so as to render the piece more quadrilateral in section, whereas the remaining sides have retained their natural rounded form. At the upper part, for about 2—2·5 cm., all four faces slope slightly down towards the end itself, which is shaped flat, and appears to have been the part of the implement intended for use.

Fig. 50 shows a flat point of bone (L. 3325) from house 141 on Maroussia. It is 10·8 cm. long, but a portion has been broken off at one end. The breadth is greatest at the middle, 9 mm., decreasing gradually thence towards the ends. Thickness of the lower half about 5 mm., decreasing from the middle upwards to about 3 mm. The point is blunt, and worn smooth.

Fig. 50. 1/2.

A point of exactly the same sort, but more roughly fashioned, (L. 3534) was found in house 133 on Renskæret. It is made from a splinter of reindeer horn, from which not even the inner tissue has been removed. The point, which is rounded and blunt, is the only part which has been worked to any degree. The length is 17·3 cm. between point and hinder end, but the whole piece has in course of time warped somewhat, and is now slightly curved. The greatest breadth is 8, greatest thickness 7 mm.

A very long, thin, fairly rounded point of bone (L. 3311) was found in house 140 on Maroussia. Length 31·3 cm.; greatest thickness is near the hinder end, and amounts to only 1·1 ×

0·8 cm. From here it decreases evenly towards the point, which is not sharp. The last two cm. at the hinder end run somewhat thinner, the hinder part is rough.

A far smaller piece, rounded, but now much weather-worn, is the bone point from house 406 at Snenæs (L. 3815). It is 17·5 cm. long, thickness at the greatest part 7 mm., decreasing towards the blunt point and also, in a lesser degree, towards the hinder end. A fragment of the fore end of such a point, 5·8 cm. long, (L. 4032) was found at Rypefjeldet.

Pl. XV, 8 shows a small pointed splinter of reindeer horn (L. 3533) from house 133 on Renskæret. It is 4·7 cm. long; at its greatest part, the section is irregularly quadrilateral, only the last cm. at one end is conically pointed. The point was doubtless originally extremely sharp.

Fig. 51. 1/2.

Fig. 51 is a small conical piece of hollow bone (L. 3536) 2·8 cm. long. The mouth measures 1 × 1·2 cm., the thin end is blunt and angular. It would seem to have served as a ferrule for some instrument or other. Found in same house as previous specimen.

Among bone implements should finally be included the nondescript specimen shown in Fig. 52 (L. 3654) from among the winter houses on the east shore of Stormbugt. It is made of reindeer horn; the curve and the difference in breadth, from 1·2 to 1·5, between the two ends, are probably due to the original shape of the antler. Thickness at the middle 1 cm., at the ends 7 mm. There is an oblong hole at either end; that at the broader end must have been about 2 cm., the one at the narrow end only some few mm. deep.

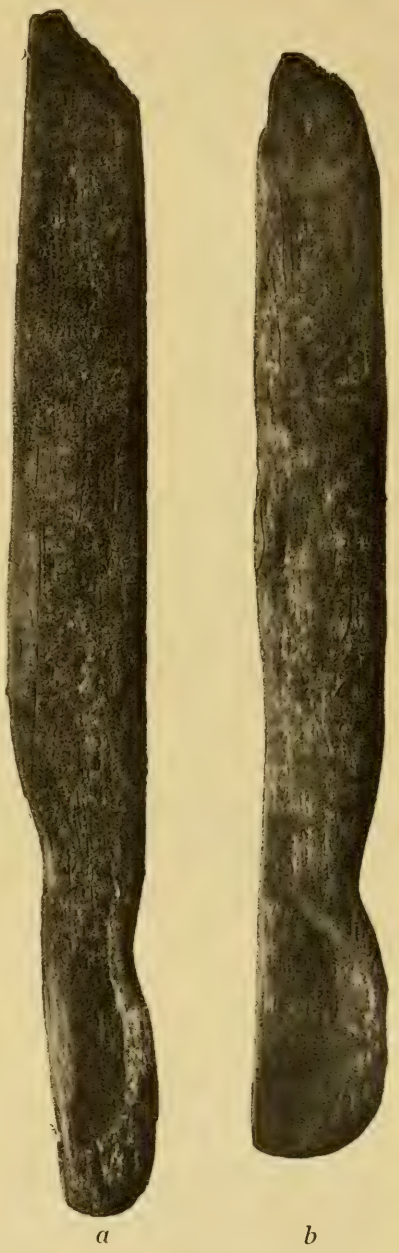
Fig. 52. 1/2.

In addition to the bone specimens above described, a number of pieces of bone were found at the various places, all more or less shaped, and doubtless intended for working on, or fragments from the making of other tools.

The find at the camping ground at Syttenkilometernæsset contained an unusual number of wooden articles. The position of the settlement on a jutting point of the open coast, with the Polar Current setting close in to land, would naturally furnish opportunity for a rich collection of driftwood. Several articles from here have already been mentioned in the foregoing, as for instance the prongs for fish spears Pl. XVII, 3—4, the ulo handle Fig. 33 *a*, the toy kayak

Pl. XXIV, 5, and the fragments of weapon shafts Pl. XVII, 1—2 and of the sledge cross-bars Pl. XVI, 5—6. Several others now remain to be described.

The objects shown in Fig. 53 are particularly worthy of mention. Both are unfortunately imperfect, the forepart in each case being defective, so that we cannot determine the use to which they were put. The grip part is hollowed out for the four fingers, and a space has been cut for the thumb on the right edge. The shaft or blade is flat, with the lateral edges evenly rounded off.



a *b*

Fig. 53. 1/2.

Fig. 53 *b* (L. 3218) is in present state 30·1 cm. long; the fore end is bevelled off for lashing on the forepart of the tool, now missing. The grip has originally been broader; on the left side it terminates in a flat surface 1·2 cm. thick, which must have been shaved down to receive another part of the grip, now lost, but which would have reached some 10·5 cm. down towards the middle, and been lashed to the main piece in two places, just in front of and behind the hollow for the fingers; part of the lashing, which was of whalebone thread, is still preserved. In addition, the front fastening has been strengthened with two nails. Immediately in front of the grip, the breadth is somewhat less; from the middle to the fore end, however, it remains nearly uniform throughout, about 3·5 cm. Thickness 1·6—1·8.

Fig. 53 *a* (L. 3219) is much weatherworn, and overgrown with moss and lichen. It is thus impossible to see whether the present breadth of the grip, only 2·8 cm., answers to the original dimension;

if anything has been broken off, however, it can only be for the last 5 cm. of the hinder end. As in the case of the foregoing specimen, the part in front of the grip is narrowed in; the greatest breadth, 3·7 cm., is not reached until a distance of 13 cm. from the hinder end. In contrast to Fig. 53 *b*, the breadth decreases evenly forward down to 3 cm., but the fore end is broken off and missing. Present length 32·2 cm., thickness, which increases gradually towards the grip end, 1·3—2·2 cm.

As already mentioned, we have no means of determining to what use these implements have been put. Wooden articles with the same marked grip have, it is true, before been found in North-east Greenland; as for instance the handle brought home by RYDER from Scoresby Sound, which he considered as belonging to a throwing stick[1], and a similar specimen found by AMDRUP at Sabine Island.[2] Three complete implements have, however, also been found with the same type of grip, 1 by the Germania Expedition and 2 by NATHORST's.[3] These last show, that this handy grip arrangement has, as is only natural, been used for various wooden implements; with such a soft material, it was not difficult to carve out the handle end so as to give a good hold. One of the three complete specimens is club-shaped, the two others are pointed, but all are narrow and rounded, whereas those shown in Fig. 53 are broad and flat, thus doubtless representing a third type of implement.

The wooden fragment shown in Fig. 54 (L. 3220) was found at the same camping place. It is 17·5 cm. long, convex on the face

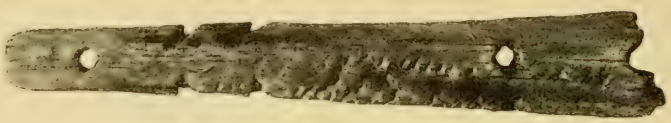


Fig. 54. 1/2.

shown in the figure, but flat on the reverse, thickness about 1 cm. The end preserved is cut off straight, but with the corners rounded off. The breadth here is 1·6 cm., but increases gradually throughout the length of the fragment up to 2·9 cm. Two holes have been bored right through in the line of the median axis, at 2 and 13 cm. distance from the narrow end; a third hole, 3·6 cm. from the latter, is indicated in the broken part. Two slanting notches have been cut in either edge, at 4·5 and 6·5 cm. from the end.

[1] RYDER I, p. 318, Fig. 17 *b*. [2] THALBITZER I, p. 484, Fig. 63.

[3] Shown by THALBITZER loc. cit. p. 531. The implement from the Germania Expedition (Fig. 103), however, which is 40 cm. long, is given on a smaller scale than the two others, of which Fig. 104 is stated as 39 cm.

Pl. XVII, 7 shows another wooden specimen from the same place (L. 3214). The end pointing left has been broken off, the other end is complete. In the lower edge, which is the thicker (1·5 cm.), a groove 6 mm. wide has been cut, beginning a couple of cm. from the end and continuing to the point of breakage. The thickness decreases towards the upper edge, where the two surfaces meet at an angle. The breadth is 4·2 cm. Close above the groove two holes have been bored through, one 2 cm., the other 9 cm. from the complete end; a third is seen at the break. On the reverse side to that shown, a slight furrow runs down from the middle hole to the grooved edge, showing that the holes must have been intended to take the lashing with which some blade or cutting edge, for instance, was held fast in the groove. The preserved end is cut off somewhat obliquely, and part of the upper edge has been cut away for the 5 cm. nearest this. There is some likelihood that the specimen may have served as the handle of a two-handed scraper, as in the case of the bone piece shown in Pl. XXVI, 5; in its present defective state, however, this cannot be determined with certainty.

Fig. 55. 1/2.

Fig. 55, from the same place, (L. 3234) is a foursided stick, 21·4 cm. long, 1·4 × 1·8 thick. One end is cut off straight, the other has been shaved down slantwise for about 10 cm., with a notch above; here an extension piece has been fastened with two nails, one where the end of the slanting surface is now, the other 2·5 cm. in from the edge of the notch. At right angles to the direction of these nails, two others, as shown in the figure, have been driven, 5·5 and 9 cm. from the straight end of the piece; one of these is still completely, the other partially preserved in its hole. From the inner hole a groove runs down to the lower edge, so that something was evidently intended to be lashed fast there; the nails only served to hold the lashing. Between the two nail holes there is a groove in the upper edge, 1·5 cm. long, 5 mm. wide and deep.

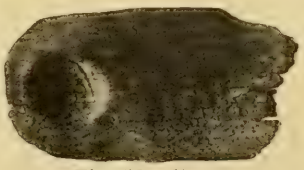


Fig. 56. 1/2.

At the same place, tent 75, the fragment shown in Fig. 56 was found. It is quite flat, only 6 mm. thick, breadth 4, length now 7·8 cm. The preserved end is rounded, close to this end a hollow about 2 cm. in extent has been cut.

Pl. XVII, 5—6 (L. 3251 and 3250) show a couple of irregular sticks, merely terminating at the one end in a thin, fine point.

Two roughly spindle-shaped sticks, (L. 3252—53) were likewise found at Syttenkilometernæsset. The former of these is rounded, 10 cm. long, thickness at the middle 1·5—1·9 cm. and at the ends about 0·8—1 cm. The other is more quadrilateral, 9·6 cm. long. At the middle it is 1·5, at the ends 1·1 cm. A round spindle-shaped piece of wood (L. 3504) from house 132 at Renskæret is exactly similar to 3252, but larger, 13·2 cm. long, thickness at the middle 2·2—2·4, at the ends 1—1·2. All these might be the legs of low hunting stools to stand on.

At Renskæret also were found two pieces of wood, alike in shape, both broken off at one end. They are made from a four-sided stick, broadest at the preserved end, about 2·5 cm. from this there is a hole driven right through; it has not been drilled, but cut out from both sides. The longer piece (L. 3445) from house 131, is 15·6 cm. long, 1·9 cm. broad and 1·4 cm. thick, at the preserved end; from here the breadth decreases to 1·2 and the thickness increases to 1·6 at the break. The other fragment, (L. 3419), from house 130, is in present state only 9·7 cm. long; at the preserved end it is 2·2, and at the other 1·6 cm. broad. Thickness 1·6 cm.

Fig. 57.

Several other smaller pieces were found at various places, these being spindle-shaped or cylindrical, ranging from 6—9 cm. in length; also numerous wooden fragments and sticks only slightly shaped.

Whalebone as a material was greatly prised; specimens were found not only on the open coast: Thomas Thomsens Næs, Syttenkilometernæsset, Renskæret, and Maroussia, but also on places up in Dove Bugt: Baadskæret, Stormbugt, Snenæs and Rypefjeldet. The greatest quantity was found at Syttenkilometernæsset, Renskæret and Rypefjeldet, the specimens being often found hidden away in some part of the bench or under a tent stone.

It has doubtless served, as suggested above (p. 457) for the sides

of oval boxes of which the bottoms were found; it was also used for bows, (cf. p. 403—04), and numerous strips were found which had been split off to the breadth of thongs or as fine thread.

Fig. 57 shows three narrow thongs made of whalebone, tied together in different ways. The one marked *a* (L. 3137) which had been placed under one of the stones round tent 73 at Sytten-kilometernæsset, is tied in a single knot; *b* (L. 3695) from the camping ground on the east shore of Stormbugt, is knotted up in a running noose which can be drawn tight by the end shown farthest to the left in the figure; *c* (L. 3721) from the same camping ground, consists of two parts; the one with its end turned upwards forms a noose round the one below.

a *b*

Fig. 58. 1/2.

Whalebone has probably been used in several cases for other implements, but being a perishable material, only few of these have been found in a state of preservation. Two such pieces, both from house 131 on Renskæret, are shown in Fig. 58. Of these, *a* (L. 3442) is knife-shaped, measuring now 13·8 cm. long, but lacking the point; one edge, viz. the back, is straight. the other curved. At the bottom of the back there is a notch, a little farther up on the opposite edge a hole. Specimen *b* (L. 3438) is 18 cm. long, narrow, only 1·2 cm. across, the hinder end frayed and apparently defective, the fore end terminating in a point with two barbs.

At the same settlement, a piece of whalebone (L. 3604) 50 cm. long, up to 2·8 cm. broad, was found with two holes drilled close together 7 cm. from one end, so as to form an oblong slit. It would seem as if the Eskimos at Renskæret had cherished a particular affection for whalebone as a material; it is here that three out of the four bow pieces were found, as described in the foregoing; the fourth was from Maroussia.

Concluding Remarks.

The culture of North-east Greenland, as it appears from the finds made up to date, is mainly of the stone age type, the use of metal being extremely rare.

The Eskimos whom Clavering encountered in 1823 on the island which now bears his name (Lat. about 74 1/2° N.) had the heads of some of their weapons edged with iron, which he believed to be of meteoric origin.[1] At Little Pendulum Island, in the same latitude, the Germania Expedition came across a knife with an iron blade, the iron here being stated as "imported".[2] From 73° 7′, again, i. e. Kjerulfs Fjord, which opens out near the base of Franz Josephs Fjord, two pieces of iron were brought back by NATHORST.[3] The next finds of iron-edged implements occur more than 2 1/2 degrees farther south, viz.; two knives at Cape Stewart (70° 27′)[4] and three items: a harpoon head, a drill and a knife, from Cape Tobin (70° 24′).[5]

These few finds comprise, as far as I am aware, all the iron hitherto met with north of 68°, which degree of latitude roughly marks the boundary between the Scoresby Sound district and that of Angmagsalik. In the collection from the Danmark Expedition, not a single piece of iron is found; as unique pieces of evidence of its occurrence, however, should be mentioned the drill shaft from Renskæret (76° 41′)[6] and the two small axe-heads from the east shore of Stormbugt.[7] At the same time it should be noted, that these items stand alone among over 100 specimens of cutting, piercing or boring implements: harpoon and arrowheads, points of other weapons, men's and women's knives, drills etc., found by the Danmark Expedition, while the whole material from North-east Greenland collected from various sources now amounts to probably somewhere

[1] PETERMANN's Mitteilungen 1870, p. 326. [2] KOLDEWEY, p. 605, Fig. 20, cf. p. 623. [3] NATHORST, p. 257 and p. 347, Fig. *b*. [4] RYDER I, p. 322, Fig. 21 *a*; NATHORST p. 347, Fig. *a*. [5] THALBITZER I, p. 347, Fig. 2, 453, Fig. 47 *d* and 455, Fig. 48. [6] Fig. 31, p. 439. [7] Pl. XVIII. 9—10, cf. p. 437.

near two thousand items. It will thus be seen, that iron must have been extremely scarce.

The Norwegian ethnographer, Dr. O. Solberg, in his pioneer work "Beiträge zur Vorgeschichte der Osteskimo", distinguishes between the true Eskimo stone age, represented, as far as Greenland is concerned, markedly and typically on the northern portion of the West Coast — and a later stone age during which metal is known, but not actually available, wherefore the form of the iron cutting edge is imitated in stone. Knives and weapon points of slate are there predominant; to this period also belongs the slate-bladed Ulo.

To the later stone age belongs, according to Solberg, the stone age of North-east Greenland, and to this it must still be ascribed, albeit the Danmark Expedition has brought to light certain implements, the non-existence of which is cited by Solberg in support of his theory as to the slight antiquity of this stone age.[1] Thus several stone bits for drills have been found (p. 439—40) a large strong scraper (Fig. 34) a flint core, from which flakes are taken off, of the same diminutive size as commonly encountered in the finds from West Greenland (Pl. VII, 12) as also some more or less shaped chippings of flint. The scraper is in this connection of minor importance, as this implement is retained in stone far on into the iron age;[2] more significance attaches to the other items mentioned, especially the flint core, which cannot be overlooked as an indication that the same small flakes were here shaped and used as in the stone age of West Greenland.

The Danmark Expedition has enriched the stone age material from North-east Greenland by the finding of several new forms of implements, and it is not impossible that subsequent expeditions may serve to throw further light upon the earliest occupation of this coast. Thostrup is doubtless justified in noting as a point of some importance the fact that the oldest ruins are so faintly discernible on the ground, and may thus easily be overlooked, or passed by as unpromising;[3] it should also, in my opinion, be borne in mind that the investigation of North-east Greenland has been carried out by expeditions working under difficult conditions, with little time to spend on detail, having many aims of various nature to consider, and frequently without previous experience in archæological work. It is thus not surprising that the small, inconspicuous flint objects are not found. In the case of the West Coast, on the other hand, the large quantity of stone age material from here, especially from Disco Bay, was obtained from time to time during the course of almost a century, largely through the agency of Danish residents,

[1] Solberg, p. 60. [2] Cf. Mason III, p. 581. [3] Thostrup, p. 338.

whose attention had been directed by scientists to the value of the small and apparently worthless objects concerned.

All this, however, gives us but a hint in the direction indicated; the actual finds as hitherto made do not yet warrant our asserting the existence of an earlier period, and the bulk of the items are distinctly suggestive of the later stone age. To this category should be reckoned harpoon heads with attached points of slate or bone; the employment of this latter material especially, for the cutting edge of a bone head, where it serves no useful purpose, is most eloquent in itself. Even clearer testimony to the earlier knowledge of iron is afforded by the slate knife fashioned to the model of an European table knife (p. 433). The other form of knife, again, with a groove for the insertion of a cutting edge, does not point very far back. As I have endeavoured to show in the foregoing (p. 431—32) this type has, in my opinion, superseded in West Greenland the shark's tooth knife, which was still in use about the middle of the 17th century, but seems to have dropped out at its close. Thus the finds hitherto made are not in themselves opposed to SOLBERG's theory, according to which the human occupation of North-east Greenland should not be dated from earlier than about the 16th or the first half of the 17th century.[1] And the finds are, of course, the only facts we have to go upon in assigning a date; the history of North-east Greenland in relation to the Europeans begins and ends with the year 1823.

As regards the neighbouring people to the south, the Eskimos of Angmagsalik, the historical data are more plentiful, albeit even here scanty enough. The name itself, Angmagsalik, is first met with in 1849;[2] we have, however, two accounts from the middle of the 18th century which seem to indicate that the region was then inhabited.[3] With such a paucity of material, every link which can be added is of value, and it appears to me therefore worth while to cite the following note, as suggesting the occupation by Eskimos of the East Coast north of 65° in the first quarter of the 18th century.

In the annual list of acquisitions for 1726 to the Royal Museum „Det kongelige Kunstkammer"[4] we find, under Greenland, mention of the following:

„Eine Grünlandische Ruder-Rieme, womit man auff beyden Seiten Rudeln kann.

Eine Lantze oder Wurf-Spiess, woran der in der mitte, nach Grünlandischen Gebrauch sitzende Hakens oder Angels verloren.

[1] SOLBERG, p. 62. [2] Here spelt Angmarselik, cf. Medd. om Grønl. Vol. LIII, p. 393 et seq. [3] Cf. THALBITZER II, p. 334 et seq. [4] In the State Archives (Rigsarkivet). The original spelling of the MS is here retained.

Eine Maschine von zwei Kreudtzweis übereinander gehende Höltzer etwas krum gebogen: welches die Grünländer auff ihre kleine Böthe im Fischen vor sich setzen; darauff ihre Lantzen undt Harpunen legen; Und auff die daran sitzende spitzige Knochen oder Zähne die Gefangene Fische und Vögel hangen.

Diese Drey Stücke sint, wie der Voigt auff Islandt Cornelius Wulf berichtet hat: von der See auff getrieben, in Guldbringe Sysel, und Western in Iissefiords Syssel gefunden worden".

Unfortunately, in the next general catalogue of the museum (1737), the Greenland section is so briefly dealt with, that it is impossible to see whether these three objects are still preserved among the old Greenland items in the National Museum. It is therefore fortunate that the description in the earlier list is of so detailed a nature as to leave no doubt regarding the objects themselves. The two first are a kayak paddle and a bird dart respectively; the third is a "kayak stool" a receptacle for holding the harpoon line, the stool being of the cross-shaped type, which has remained in use at Angmagsalik down to our times.[1] For the statement as to its being employed to hang fish on, the authority quoted must be held responsible; he is however, correct as regards its place in the kayak, and the fact that the harpoon is placed upon it.

Now the two first-named implements are of widespread occurrence; the third, however, is typical for Greenland, albeit not restricted to the eastern part, as this form was, in earlier times, also employed on the West Coast.[2] The form of the objects, then, gives us no nearer determination of locality than Greenland, but the area of possible origin becomes more restricted when we begin to consider from what parts of Greenland they could have been carried by the current to the west coast of Iceland; Isafjordssyssel and Guldbringasyssel form respectively the north-west and south-west corners of the island.

The Arctic Current flows, as we know, in a southerly direction down along the coast of North-east Greenland. One branch follows the coast farther on through Danmark Strait and curves round the southern point of the land up northward along the west coast. Another bends eastwards along the north and east coasts of Iceland, where it meets the so-called Irminger Current, which, owing to its higher temperature, here becomes the surface current. The Irminger Current then follows the south coast of Iceland to the westward, and curves up along the west coast of the island.

[1] Cf. Thalbitzer II, p. 388, Fig. 92 *b*.

[2] E. g. a specimen preserved in the National Museum, found in a grave at Kardluk in Waigattet, about 70° N. lat. (L. b. 294).

Captain C. RYDER, of the Danish Navy, now head of the Danish Meteorological Institute, has carried out a series of investigations in connection with the currents in northern waters by means of bottle post.[1] Thus in the course of his expedition to East Greenland 1891 —92, a bottle was set out at Heklahavn in Scoresby Sound; after a lapse of 20 months it was found among the islands outside the harbour of Reykjavik. The chart in RYDER's paper[2] shows its supposed route as running close in towards Cape Nord, in Isafjordssyssel, whence it should then have proceeded along the north, east and south coasts of Iceland, finally bringing up at Reykjavik, in Guldbringasyssel. From this it is evident, that Scoresby Sound must be reckoned as among the places whence the objects above mentioned might have come.[3]

Thinking now, that it should be possible to fix a southern limit for such possible starting places, I consulted Captain Ryder on the subject; he informed me, that if the objects had drifted from the east coast of Greenland directly to Iceland, then the southern part of the coast would be out of the question; they could hardly have come from anywhere south of 65°.

Theoretically, there still remained the possibility that the objects might have started from the southern east coast or from the west coast of Greenland, and followed the other branch of the Arctic Current northward and west over to Labrador, and thence south and east, finally approaching the coast of Iceland from the southward. Practically speaking, however, this alternative may doubtless be disregarded. The bottle from Scoresby Sound took 20 months to reach Reykjavik; objects travelling by the other route would be several years on the way, and even if they escaped being washed ashore at other places on the lengthy voyage, there is no doubt that in any case a thing of so frail construction as the cross-shaped kayak stool must have been dashed to pieces long before it could have reached so far.

Such argument may not perhaps furnish any decisive proof; nevertheless, the case in question does seem to indicate with a pro-

[1] RYDER III—IV.

[2] RYDER III, Chart IX, H. 53.

[3] Of the remaining material, only a small amount has any bearings on the regions with which we are here concerned; a bottle set out at sea outside Scoresby Sound (loc. cit., H. 5) and another outside Franz Josephs Fjord (H. 38) both drifted eastward round Iceland, but escaped the Irminger current, and continued their course towards the Færøes, where the latter was washed ashore, while the former floated still farther eastward, and turned up along the Coast of Norway, where it was found off Throndhjem. Finally, a bottle set out off Angmagsalik, but 4 —5° farther east, came ashore at Berufjord, midway up the east coast of Iceland. (RYDER IV, chart I, A 63.)

bability approaching certainty, that the coast north of 65° must have been inhabited prior to 1725.

In seeking to draw conclusions from the foregoing detailed investigations, as to the culture of North-east Greenland in its relation to that of Greenland generally, we are hampered in the first place, by the slight degree of variability in Eskimo implements with place and time. Then again, the culture of West Greenland cannot be taken as a unit in itself, but should rather be considered — quite apart from European influence — as a mixture of elements from various tribes, which have immigrated in course of time to the country, and have been forced by existing natural conditions, the close proximity of the inland ice to the coast, to follow the same route.

The quantity of material procured from North-east Greenland is now, however, so large that we can no longer put aside the question as to the relation, in point of culture, of these tribes to their neighbours in the west and south.

The Danmark Expedition was able to follow the traces of Eskimo occupation northward as far as about 82° N. Lat., where Independence Fjord runs in south of Peary Land, and some way up this fjord as far as Cape Peter Henrik at the mouth of Hagens Fjord. Later on, the first Thule Expedition encountered, in 1912, Eskimo tent rings still farther up, at Jørgen Brønlunds Fjord,[1] which lies about midway between the West Coast (Nares Land) and the East Coast (Nordostrundingen). The tent rings were situated on the south coast of Peary Land, but on the seaward coast of this peninsula, neither Peary nor the Danmark expedition found any trace of Eskimo occupation. On the West Coast also, the trail is lost at about 82°.[2] From what we now know, there seems little reason to doubt that the route of the Eskimos migrating from one coast to the other passed south of Peary Land.

To the northward, the nearest neighbours of the North-east Greenland Eskimos are to be found at Smith Sound on the West Coast. Here, however, we meet a marked instance of the very feature before mentioned: new forms of culture superimposing themselves upon the older. As referred to in the foregoing, an immigration took place here in the 60's of the past century, which carried with it the introduction or alteration of characteristic implements; the kayak and its appurtenances, the salmon spear, the bow and arrow as they were found there until superseded by firearms, were

[1] Knud Rasmussen II p. 317 et seqq., cf. Pl. XI.

[2] Nares, Vol. II, p. 190 (Feilden).

all introduced from the American side about that time. If the question as to whether the Eskimo of North-east Greenland had immigrated by way of Smith Sound were to be decided from the forms of implements which now characterise the culture of the latter region, then the answer would have to be negative. From the tribe's first encounter with Europeans in 1818 to the immigration mentioned, the implements in use were but the rudest necessaries; grave finds, however, indicate that this had not always been the case. Both harpoon heads and arrowheads have been found in older forms, closely related to those of the West Coast generally,[1] and it may be expected that material preserved in various collections, but of which no description has yet been published, will confirm this.

The effacement of the earlier culture in this region is the more regrettable, since Smith Sound and the Kennedy and Robeson Channel farther to the north are the only natural immigration routes for the various tribes, and form the crucial point in the question as to the course of Eskimo migrations in Greenland; the Polar Eskimos are the only ones now living at the gate, so to speak, of Greenland itself.

Turning to the southern neighbours of the North-east Greenlanders, the people of Angmagsalik, we do not here encounter the markedly heterogeneous mixture of implement types noted in West Greenland, but a far greater uniformity is on the contrary apparent. A number of implements must be taken as peculiar to this tribe, and a particular style of art has developed, indicating that the inhabitants of this region have been left to themselves, and not continually subjected to the influence of fresh immigrations into the district.

This is, however, not to be understood as meaning that the tribe in question has lived in a state of total isolation. It must be borne in mind that the fact of their now having no neighbours nearer than the southern point of the land is a state of affairs which has developed in the course of the past hundred years, due to the continual movement of the southern East Greenlanders over to the attraction of the Danish trading settlements. GRAAH, on his voyage up in 1829, estimated the population on the East Coast as far as Umivik (64° 18′ 50″) at close on 600, of which half were living south of 63½°.[2] Even before his return, however, 120 had left, and some 80 others were preparing to follow their example in the following year.[3] The last East Greenlanders south of the Angmagsalik territory, 38 in

[1] cf. KANE, Vol. I, p. 52 and the present work p. 405.

[2] GRAAH I, p. 118, II, p. 115.

[3] GRAAH I, p. 149, II, p. 144.

number, from Tingmiarmiut (61½°) did not leave the East Coast until 1899.[1] In all probability, the Angmagsalik Eskimos would have done likewise, leaving the coast entirely uninhabited, had not the movement been artificially checked by the establishment of a trading station at Angmagsalik in 1894. Through the agency of these neighbours, who made long journeys down to the southern point of the land, and, encountering there the Greenlanders of the West Coast, brought back with them European products, especially iron, West Greenland and Europe were brought indirectly into contact with the Eskimo of Angmagsalik. Nor were these insensible to the new influence. Thus when Holm discovered Angmagsalik in 1884, several women's knives of the West Greenland type were already in use there. We may even note a quite remarkable tendency to learn anything new, as evidenced, for instance, by the fact that their umiaks are built on the dovetail principle, whereas in West Greenland lashings are still used; their women, also, have latterly evinced partiality to the European skirt, an awkward article of dress which has not found favour on the West Coast, albeit this region was colonised at a far earlier date. And it is beyond doubt, that the form of headgear shaped like a sailor's cap [2] is of European origin.

There is thus evidence enough of external influence: from the south, and the more southerly West Coast districts.[3] Even the peculiar style of ornamentation, consisting of bone laid on to wood, is found in West Greenland; it has, however, in Angmagsalik, developed to a remarkable degree and with a local stamp of its own, just as the European cap has there been transformed to a graceful fashion of headdress suited to the conditions of the place.

The clear and distinctive traits apparent in the culture of Angmagsalik are thus not due to isolation or insensibility to external influence, but should, in my opinion, rather be ascribed to the fact that we have here a receptive population living in a region just sufficiently sequestered from the outside world to permit of their absorbing what may be brought within their reach, adapting it to their particular needs, and giving it a stamp of their own.

If now we proceed to consider the implements from North-east Greenland in comparison with those from Angmagsalik, it must be admitted that the points of resemblance are, as soon as we pass beyond what is common to Greenland generally, or to the Eskimo

[1] Meldorf, p. 23, cf. p. 21. The few items preserved in the National Museum from these last inhabitants of South-east Greenland agree with those of the Eskimos from Angmagsalik.

[2] Thalbitzer II, p. 589 and 591, Fig. 314—315.

[3] Birket-Smith I, p. 20 et seqq.

as a whole, remarkably few and slight. Thus, as mentioned above, (pp. 415—17) a so important article as the sledge in North-east Greenland differs very considerably in dimensions from the little narrow sledge of Angmagsalik, while on the other hand, it closely resembles the West Greenland type. Harpoon heads, also, resemble more certain West Greenland forms than the characteristic fashion of Angmagsalik. The needlecase, again, which in North-east Greenland is found in its oldfashioned form (pp. 365—66) is of comparatively frequent occurrence in West Greenland north of the Arctic Circle, while, as far as I know, only one specimen of this type has ever been found in South Greenland, and in Angmagsalik it is replaced by the needle skin. Something similar may be noted with regard to the men's knives of bone, grooved for insertion of a cutting edge (p. 429 et seqq.); of these also, numerous specimens are known from the northern part of the West Coast, there is a single one from South Greenland, and on the southern part of the East Coast, including Angmagsalik, it is altogether lacking.

It would certainly seem that some little importance should be attached to these features, albeit it may be admitted, that Angmagsalik and the southern part of the East Coast are, from the archæological point of view, somewhat of a *terra incognita*, where future finds may lead us to alter our views in some degree.

There are, nevertheless, also points of contact between North-east Greenland and Angmagsalik. Among the series of harpoon heads from North-east Greenland, one (RYDER I, p. 314, Fig. 13 b) which was found as far south as Scoresby Sound, differs from the rest. It is furnished with one lateral barb in front, a peculiarity doubtless borrowed from the south, as it is not found in any of the many specimens from farther north.

Another link with the south is afforded by some of the loose shafts belonging to the larger hunting weapons. It has been shown above that the typical feature of this part of the weapon in North-east Greenland is its conical posterior termination, as found in earlier specimens from West Greenland. In the region about Scoresby Sound, however, we have in this case also to note a certain reservation: incipient transition to the newer type of connection between shaft and foreshaft, as found in Angmagsalik, the foreshaft being cut off flat, save only for a slight projection in the centre, answering to a hole in the flat surface of the shaft mounting (cf. pp. 390—91).

These two features are of interest as indicating the existence of some contact between the North-east Greenlanders and those of Angmagsalik in the region about Scoresby Sound. That such indications — among which should doubtless also be reckoned the sporadic

occurrence of iron in the southern regions of North-east Greenland — appear, is not surprising, in view of what we know regarding the movements of the Angmagsalik Eskimo to the northward. Thus a man named Kunak, who was still living in 1906, informed Holm that he had, as a boy — probably about the year 1850 — lived for three years at Nordre Aputitek (67° 47′ 5″), and had been there again about 1886.[1] Amdrup found at this place a house, which he identified as that where Kunak had lived as a child; he gives the following description: "The ruined house itself lay on a site on which two other houses had previously stood, so that the island must have been successively occupied by different sets of inhabitants". "Its size precluded the possibility of its having been inhabited after Kunak by Eskimo from the North".[2]

Holm further writes: "A man who is still alive told me that his father once drove in a sledge from northern Aputitek to the district round Kangerdlugsuak. Here he found a house which had just been deserted by its inmates, who had driven away in sledges. It could be seen from the sledge tracks that they had gone northwards. They lay down to sleep in the house, but as he was stabbed in the leg with a knife while he was asleep, he returned as fast as he could to Aputitek, without seeing anything of the inhabitants. Nothing has ever been heard since of the people up in the north".[3] Elsewhere, the following note is made: "According to the statement made by another, the place visited by this man was as a matter of fact, the country north of Kangerdlugsuak, and he reported, that the coast here curved round in a northerly direction".[4]

These accounts suggest that the routes of the two tribes have crossed from time to time; there is, however, no record of friendly intercourse between one tribe and the other. Another, more direct indication as to the routes followed is furnished by the houses still preserved. Unequal as they are in size, and varying considerably in shape, their true significance is not always very clear; nevertheless, certain features can be laid down with certainty as regards the winter houses of indubitably North-east Greenland origin. On referring to the plate showing the measured specimens of the houses, about 60 in number, found by the Danmark Expedition[5], it will be seen that with one exception (that of the double house 132—133 at Renskæret) the greatest extent is not, as in Angmagsalik, transversely to the direction of the passage-way, but — save where length and breadth are equal — in the direction from passage-way to rear wall. Ryder notes the same with regard to the fifty or so houses

[1] Holm III, p. 218, Amdrup I, p. 246 et seqq., II, p. 311, Thalbitzer II, p. 345.
[2] Amdrup II, p. 311. [3] Holm II, p. 110. [4] Holm III, p. 222. [5] Thostrup, Pl. II.

he found at Scoresby Sound,[1] and a like feature is observable in the illustrations given by KOLDEWEY and NATHORST of the houses they encountered in the interjacent regions.[2] Peculiar to this type is the deeper-cut passage-way, and niches in the lateral walls are also frequent. The size varied, in those seen by the Danmark Expedition, from 1·80×1·80 to 3·25×3·00 or 3·50×2·80; in the case of RYDER's from 1·60×2·50 to 2·70×3·80 metres.

The same type of house was found by AMDRUP in the settlements he investigated at Scoresby Sound and south of there as far as the Kangerdlugsuak glacier: at Cape Tobin and the Skærgaards Halvø.[3] South of this glacier, we enter the territory known to have been traversed by the Angmagsalik Eskimo, and where we might in consequence expect to encounter the larger houses with passage-way running out from one of the longer sides. Such were also found, from Nordre Aputitek southward, but in addition to these, the smaller houses, with greatest extent in direction of the passage-way, were likewise encountered as far down as Depot Island, south of Kangerdlugsuatsiak Fjord. AMDRUP notes, with regard to this point, that it to some extent confirms RYDER's hypothesis, viz; that the Eskimo of North-east Greenland gradually moved southward via Angmagsalik to the southern East Coast: "It is necessary, however" he adds, "to be very cautious in drawing conclusions from the size of the houses as to the peregrinations of the Eskimos; for the size of the houses is no doubt determined by local circumstances, and not by any peculiarity of the different tribes".[4]

That the question is a difficult one to determine is certain, and there are good grounds for recommending caution, the more so, as these houses have not been subjected to excavation. Nevertheless, for my own part I consider the occurrence of the small, deep houses here of some importance as indicating that families from North-east Greenland must have penetrated down to somewhere near Angmagsalik; I cannot but regard it as significant, that both types of house are met with at one and the same spot, i. e. under identical local conditions, as for instance between Cape Warming and Langø, at Nordfjord, between Kangerdlugsuatsiak and Nordfjord, and on Storø.[5] At the last-named place we encounter the peculiar circumstance of two large houses having been reduced in size by building new side walls. If my theory holds good, then what must have happened here would be this: Eskimos coming down from the North had taken up their quarters in a house previously built by a party from Angmagsalik, in the same manner as the man from there just mentioned

[1] RYDER I, p. 296. [2] KOLDEWEY, p. 589; STOLPE, Pl. III. [3] AMDRUP II, p. 315 and 312. [4] AMDRUP II, p. 320. [5] AMDRUP II, p. 303, 301, 300 and 299.

found a lodging north of Nordre Aputitek in a house there belonging to Eskimos from the North.

Whatever degree of importance be attached to the construction of the houses, it is at any rate certain that the Angmagsalik Eskimo in the country round Kangerdlugsuak were aware of the existence of some people unknown to them, and that the North-east Greenland types of implements in the region of Scoresby Sound exhibit features hardly to be otherwise explained than as due to southern influence, the point of contact being probably near the glacier of Kangerdlugsuak, and the communication taking place between certain adventurous spirits on either side, whose wanderings led them beyond the natural territorial limits of their tribe.

Thostrup, in his description of the settlements found by the Danmark Expedition,[1] takes the state of preservation of the houses as the basis for an hypothesis according to which the immigration into North-east Greenland should have taken place in three sections, with a considerable interval of time between the two first. All can be traced in the Cape Bismarck district; outside this, however, the oldest ruins are only found in the north, and the two younger only in the south.

The state of preservation alone seems to me a somewhat slight foundation on which to base conclusions; the construction observable in the ruins does not show the difference between the three groups, and I have therefore, in the course of the work, endeavoured to find some such features as might serve to support the theory. That I have not succeeded in doing so does not disprove it, for as a matter of fact, none of the oldest ruins in the Cape Bismarck district have been subjected to detailed investigation; the find from Eskimonæsset is the only one giving a fuller representation of the earliest group. As regards the two later ones, which lie nearer to each other in point of time, it is hardly to be expected that any difference should be discernible in the workmanship, when both were due to the same tribe.

In answer to my doubts upon this point, expressed by word of mouth, Hr. Thostrup firmly maintained his view. That there should be a difference of date between the northern and the southern ruins is in itself natural enough, if the migrations from the north took place without any break of great duration until we reach Germania Land, where the settlements are numerous along the sea coast and in Dove Bay. It is but natural that the Eskimo should have remained here for a time, before going farther southwards.

[1] Thostrup. p. 335 et seqq.

When, however, the writer extends his theory and claims that the latest ruins should be due to immigration from the south, the finds themselves, in my opinion, contradict him. The transition in the types of implements now apparent in Scoresby Sound should in such case be met with in Germania Land. The fact, as mentioned by him, that graves are not found north of 77°, is rather due to conditions of climate than to difference of culture; during a very large part of the year, the material necessary for their construction is hidden by snow. One of the principal arguments in favour of the theory of later immigration from the south is the fact that hunting from boats is seen to be carried on at places where the sea may be traversed by sledge throughout three-quarters of the year. It may be admitted, that a people coming from the North, and never having hunted in kayaks, would hardly hit upon this method at a place where such conditions prevailed; it would be a different matter in the case of a tribe accustomed in their original home to the use of the kayak, and penetrating down to the Cape Bismarck district, not in the course of generations, but without longer halts than were imposed by natural circumstances, to find there conditions sufficiently favourable for them to settle down.

A further important argument in favour of Hr. THOSTRUP's theory is the hunting available; among the earlier inhabitants, the musk ox was the principal game to be found on land, while with the younger, the first place was taken by the reindeer. The former should thus have followed the musk ox southward, the latter moving northward on the track of the reindeer up to the limit of its occurrence. This hypothesis, attractive enough in itself, is nevertheless hardly conclusive when not supported by the remaining facts as known. Albeit instances are known of Eskimos in reindeer country having refrained from hunting the animal in question,[1] it is hardly surprising that they should, when suddenly encountering this game, prefer it to the difficult hunting which had previously been their only resource in this field, more especially if they were acquainted with reindeer from their original home.

Judging from the implements, it seems to me beyond doubt that the Eskimo of North-east Greenland must have come from the North. Their traces then indicate the route as south of Peary Land and out

[1] cf. STEENSBY III, p. 302. This writer gives, by the way, a plausible explanation of the fact that Polar Eskimos had not previously hunted reindeer; this would, he points out, be due to their having been engaged during summer in the pursuit of feathered game, which would keep them away from the reindeer country.

along Independence Fjord to the East Coast. And we may with a considerable degree of certainty mark down the region on the American side whence they originally came.

Prof. Franz Boas has, in his work "The Eskimo of Baffin Land and Hudson Bay" collected a mass of material which for the first time renders it possible to make closer comparison. Immediately after the publication of the Amdrup Collection records moreover, he proceeded, in a review in the American weekly, "Science",[1] to draw the conclusions to which these pointed. He writes, in this connection: "It brings out conclusively the close relationship between the culture of the northeast coast of Greenland and that of Ellesmere Land, northern Baffin Land and the northwestern parts of Hudson Bay. The similarities are so far-reaching that I do not hesitate to express the opinion that the line of migration and cultural connection between northeast Greenland and the more southwesterly regions must have followed the shores of Ellesmere Land, the northern coast of Greenland, and then southward along the east coast". Reference is made to a number of implements, especially needlecases, snow knives, the ornamentation on the comb from Dunholm and the hunting stools from Cape Tobin.[2]

The extensive material from the northern regions brought back by the Danmark Expedition entirely bears out the theory of the famous American ethnographer. The country about Southampton Island, especially, affords some very close parallels. In addition to snow knives and needlecases, we here find ornamental plates of bone with a dotted pattern, exactly corresponding to that on the bone plates Pl. XI, 1, and Pl. XXV, 19 (p. 375); there are barbs for side prongs of the salmon spear as in Fig. 17 (p. 398), two-handed scrapers of bone like Pl. XXVI, 5 and those found by Ryder and Amdrup (p. 445), and a harpoon head of the same form as that in Fig. 8 should also probably be noted here. And in contrast to what is generally the case among the Central Eskimos, arrowheads with conical base have been found; one specimen corresponds entirely to some from North-east Greenland;[3] the wooden bow also resembles the North-east Greenland type, though it is heavier; the manner of joining the parts, when not made in one piece, is the same in both places.

With regard to snow knives and needlecases, we find in the regions between Southampton Island and Greenland connecting links

[1] Issue of 15. Oct. 1909. (Boas IV).

[2] In Danish, W. Thalbitzer has since described the resemblances with the same implements (Thalbitzer IV).

[3] Boas III, p. 37, Fig. 193 b; cf. Ryder I, p. 309, Fig. 9.

in forms from Ponds Bay; small figures of bone like these found at Snenæs and Rypefjeldet were brought home by SVERDRUP from Stenkulsfjorden in Kong Oscars Land, and hunting stools like those from Cape Tobin have been found in Heibergs Land and Grinnell Land.

GUNNAR ISACHSEN, cartographer to the Sverdrup Expedition of 1898—1902, has,[1] on the basis of the important discoveries made by that expedition, charted the supposed route followed by the Eskimo on their wanderings through the newly found country up towards Greenland. Since then, however, these theories have been opposed by HERMANN G. SIMMONS,[2] the botanist of the expedition, *inter alia* on the grounds that our knowledge, especially as to the western parts of the newly discovered region, is still inadequate. In face of this warning from a man able to speak from personal experience, it would doubtless be unwise to take up the question for discussion in these pages, the more so since the data on which my work must be based, viz; the implements found, are only extremely few in number. I will therefore merely point out that the shape of the houses is the same as in North-east Greenland.[3]

I must also refrain from dwelling on the various hypotheses which have been advanced by several distinguished investigators and scientists with regard to the migration routes of the Eskimos in Greenland itself; the theories in question may be taken as generally known, and lie outside the scope of the present work. I have here been concerned solely with the finds, and it is on these alone that my conclusions have been based. It is to be hoped that further expeditions will in the near future augment the material from the regions west of Greenland, and thus furnish opportunity for continuing the work already commenced on the basis of the rich material brought to light by the Danmark Expedition.

[1] PETERMANN'S Mitteilungen Vol. 49, p. 150—51.

[2] YMER, Vol. 25, p. 173 ff.

[3] cf. SIMMONS, loc. cit., p. 190—91.

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